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Vol. CIII.

# Allenburys PASTILLES

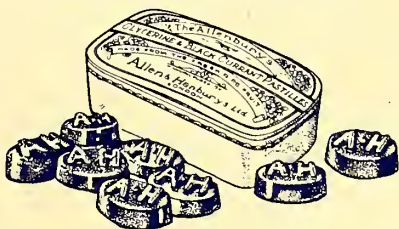
*The Criterion of Excellence.*

## GLYCERINE & BLACK CURRANT

The intrinsic merits of these pastilles, together with effective and sustained national advertising, have created a very large demand that is rapidly increasing. We supply artistic and attractive show material for window, case and counter display. The 'Allenburys' Pastilles are easy sellers and often convert casual into regular customers.

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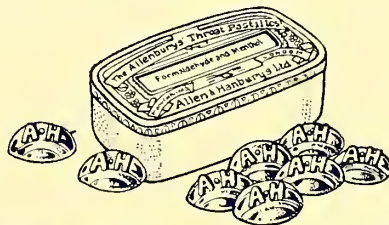


## MEDICATED

A comprehensive series embodying a wide range of well-tried formulæ. These pastilles have long held the premier place in the esteem of the Medical Profession and of the discriminating public. They are elegant and effective, and distinguished by their uniformity, accuracy of dosage, correct solubility and good keeping qualities. This is the time to replenish stocks in readiness for the winter demand.

**On the P.A.T.A.**

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Special descriptive booklet will be sent on application.



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**MORNY**

for ELEGANT and ORIGINAL presentation of

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is still further enhanced by the new

**“BIJOU” FLACON**

IN ITS NOVEL and TASTEFUL CARTON  
 now ready for issue in eight favourite fragrances.

*Minimum Retail Price*

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**6/6**

**“MYSTÉRIEUSE”**

**6/6**

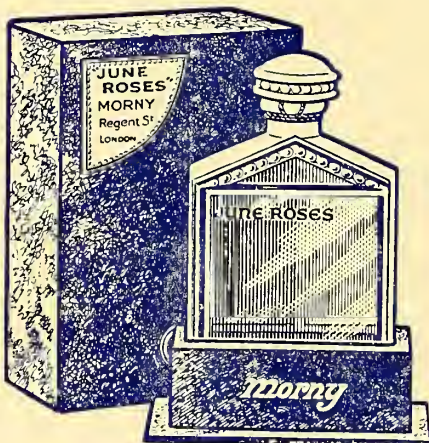
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CARNIVAL”**

**7/-**

**“TRIOMPHE”**

**7/6**

(Nominal Half-ounce)



*Minimum Retail Price*

**“JUNE ROSES”**

**5/6**

**“FANTASIE”**

**6/-**

**“NOCTURNE”**

**6/-**

**“SÉRÉNADE”**

**6/-**

(Nominal Half-ounce)

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THE CHEMIST AND DRUGGIST

AUGUST 23, 1924.

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## THE WIGGLESWORTH WAY

*Before you lay in Winter Stocks, send for a sample, it is parcelled up ready for sending with all the usual details.*

IF YOUR P.C. ARRIVES FIRST FROM YOUR DISTRICT YOU WILL BE GLAD YOU WROTE AT ONCE, IF YOU DON'T YOU MIGHT BE DISAPPOINTED.

**WIGGLESWORTH, LIMITED**  
**WESTHOUGHTON**  
**LANCASHIRE**

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A 'WINNER'  
FOR THIS  
WINTER



*Better  
send  
your P.C. now. —*

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our Glycerine, Lemon and Honey,  
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1-doz. 1/-	B. & B. Lysol	6	6
1-doz. 1/9	Do.	12	0
1/6-doz. 2/6	Do.	3	6
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## INDEX TO ADVERTISERS

Allen & Hanburys, Ltd. (Pastilles) Cover	Campbell, Achnach & Co., Ltd. (Ronoleke Hot Water Bottles) ... 15	Frankenberg, L. (Clocks, &c.) ..... 23
Allwood Bros. (Perfumery) ..... 18	Campbell, J. D. (Nicotine Insecticides) ..... xxxi	Freudentheil, Smith & Co. (Cod Liver Oil) ..... 48
Alza Manfg. Co. (Chemicals, &c.) ..... xxiii	Carnegie Bros. (Chemicals) ..... iv	Fuller, R. L., & Co., Ltd. (Quinine Salts) ..... vi
Anglo-American Pharmaceutical Co., Ltd. (Tubette Cream) ..... 28	Cavendish Chemical Corporation ..... xx	Gardner, W., & Sons (Glos.), Ltd. (Machinery) ..... xxvii
Arco, Ltd. (Russian Crude Drugs, &c.) ..... xii	Christy, T., & Co., (Grips Pastilles, Py-shan Points Tea, Zepto) ... 16-52-56	George, Ernest J. (Valuer, &c.) Col. Supp.
Arnfield, J. C., & Sons, Ltd. (Raspberry Vinegar) ..... iii	Clayton Aniline Co., Ltd. (Coramine) ix	Gibbins, R., & Co. (Tablets) ..... xxiii
Arnott, J., & Sons, Ltd. (Oils) ..... 37	Coate & Co. (Axminster), Ltd. (Tooth-brushes) ..... 32	Gledhill, G. H., & Sons, Ltd. (Cash Tills) ..... xxvi
Ashton & Parsons, Ltd. (Phosferine) xxxiii	Cooper, Lionel (Salviae) ..... xvii	Gollin & Co. (Pty.), Ltd. ("Aspro") xv
Association of Manfg. Chemists, Ltd. Col. Supp.	Courtin & Warner, Ltd. (Chemicals, &c.) ..... ii	Goodall, Backhouse & Co. (Malt and Oil) ..... xiv
Atha, J. W., & Co. (Lighting) ..... 54	Cowles, E. (Coll. Tube Machinery) xxvi	Gordon, H. (London), Ltd. (Feeders) 40
Atkinson, J. & E., Ltd. (Perfumery) ... 4	Cresswell Bros., Branch Intl. Sponge Importers, Ltd. (Sponges) ..... 35	Gough, Kidston & Co. (Sulphur) ..... ii
Ayrton-Graham, Ltd. (Shopfittings) xxvi	Davenport, J. T., Ltd. (Chlorodyne) xviii	Gower, J. (Books) ..... Col. Supp.
Bandoeng Quinine Factories ..... xvii	Dearborn (1923), Ltd. (Toilet Specialties) ..... 22	Grafton Chem. Co., Ltd. (Westons Stop C'agh) ..... xx
Barker, R., & Son, Ltd. (Infants' Preservative) ..... 42	Debacq & Harrop (Toilet Preps.) ..... 20	Grimble & Co. (Raspberry Vinegar) viii
Barradell, J. T. (Chamois, Sponges, &c.) ..... 58	Dederich, W., Ltd. (Ichtbyol) ..... xvi	Grout & Co., Ltd. (Norvic Crêpe Bandage) ..... 50
Battle, J. C. M. (Vermin Killer) ..... xxxi	Dee Oil Co., Ltd. (Petroleum Jelly) 56	Guest, T., & Co., Ltd. (Throat Tablets, &c.) ..... 44
Bayer Products, Ltd. .... 56	Deshell Laboratories, Ltd. (Petro-lagar) ..... xxv	Haller Laboratories, Ltd. (Danyz Virus) ..... xxx
Beatson, Clark & Co., Ltd. (Bottles) xxxi	Dick, W. B., & Co., Ltd. (Liquid Paraffin) ..... 39	Haller & Phillips, Ltd. (Glycerine) ..... viii
Beaverpuf, Ltd. (Powder Puffs) ..... 28	Dodge & Olcott Co. (Essential Oils) 20	Hampshire, F. W., & Co., Ltd. (Fru-Ju's, &c.) ..... 33-xxx
Beecham, Thomas (Pills) ..... xxiv	Dubarry et Cie (Toilet Preps.) ..... Cover	Harding, Holland & Fry, Ltd. (Petroleum Oils) ..... 58
Beecham, M., & Son (Lait-Larola, &c.) 32	Edge, W., & Sons, Ltd. (Drummer Dyes) ..... xxxi	Harris, J., & Co. (Advertising Balloons, &c.) ..... 42
Benger's Food, Ltd. (Foods) ..... 56	Edme, Ltd. (Malt Extract) ..... 44	Harvey & Co. (Dublin), Ltd. (Veterinary) ..... xxx
Bengue, Dr., & Co. .... xx	Edwards Harlene, Ltd. ("Junofloris") 25	Hay, Wm., Ltd. (Flavouring Essences) 47
Bennett, Sons & Shears, Ltd. (Machinery) ..... xxvi	Ellis, Son & Paramore (Trusses) ..... 51	Haywood, J. H., Ltd. (Surgical Appliances) ..... 40
Berdoe & Fish (Valuers, &c.) Col. Supp.	Endoerines, Ltd. ("Harrower" Preps.) ..... xxiii	Henry, T. & W. (Calcined Magnesia) xxiv
Berk, F. W., & Co., Ltd. (Chemicals, &c.) ..... v	Essenflour Products, Ltd. (Sandalwood Oil) ..... 20	Heppells, Ltd. (Lamplough's Saline) 2
Berton, Arthur, Ltd. (Dr. Whites' Sanitary Towels) ..... 41	Eucryl, Ltd. (Denture Powder) ..... 30	Hevard, R. H., Co. (Surgical Goods) 41
Bewells, Ltd. (Little Black Devils) xvi	Evans, N., & Rais, Ltd. (Rasevan) ..... 52	Heymans, Rene, Ltd. (Enemas, &c.) 42
Blackaller & Pleasance (Eau de Cologne) ..... 19	Evans Sons Lescher & Webb, Ltd. (Shopfittings) ..... 13	Hindes, Ltd. (Hair Brushes) ..... 32
Blackie, Robert (Winter Lines) ..... 54	Evan-Williams Co., Ltd. (Henua Shampoos) ..... 23	Hobson, Trimble & Co., Ltd. .... 52
Blyton, Astley & Co. (Menthells, &c.) xi	Everett & Co. (Natural Mineral Waters) ..... 52	Hoffmann-La Roche Chemical Works, Ltd. ("Sedobrol" Tablets, &c.) ..... viii
Boake Roberts, A., & Co., Ltd. (Perfumery Chemicals, &c.) Text	Fairchild Bros. & Foster ("Holadin") Text	Hollandsche Melksuikerfabriek ..... xii
Bonvet Manufacturing Co. (Dog Medicines) ..... 52	Fairy Dyes, Ltd. (Home Dyes) ..... xxxii	Hornby & Co. (Tin Canisters) ..... 51
Bow's Liniment, Dr., Ltd. .... xvi	Fassett & Johnson, Ltd. (Phyllosan) .. xxi	Hovenden, R., & Sons, Ltd. (Lloyds' Euxesis) ..... 22
Brand & Co., Ltd. (Foods) ..... 48	Ferris & Co., Ltd. (Nigroids) ..... xxiv	Hubbuck, T., & Son, Ltd. (Oxide of Zinc) ..... viii
Brett & Co. .... Col. Supp.	Field, C. W., Ltd. (Saponine Powder, &c.) ..... vii	Iglodine Co., Ltd. (Disinfectant, &c.) 54
Brook, Parker & Co., Ltd. (Dutch Drops) ..... xx	Fink, F., & Co. (Gums) ..... 52	Ingram & Royle, Ltd. (Mineral Waters) ..... 49
Bromage & Co. (Solvents, &c.) ..... xx	Forbest, Ltd. (Developing) ..... 37	
Burge, Warren & Ridgley, Ltd. (Hot Water Bottles) ..... 50	Ford, Shapland & Co., Ltd. (Printing) xxviii	
Burkett, Sharp & Co., Ltd. (Chemicals) vi		
Burrough, J., Ltd. (Absolute Alcohol) Text		
Burroughs Wellcome & Co. (Cod Liver Oil and Malt) ..... 55		

[Continued overleaf.]

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## INDEX—cont.

Johnson & Sons (Mfg. Chits.), Ld. (Chemicals) .....	iii	Oppenheimer, Son & Co., Ld. (Robo-leine) .....	xxiii	Spencer, Isaac, & Co. (Aberdeen), Ld. Text	
Josephs, Philip, & Sons, Ld. ....	xxvi-Col. Supp.	Orridge & Co. (Valuers, &c.) Col. Supp.	ix	Spurway et Cie, Ld. (Christmas Per-fumery) .....	18
Kathijax, Ld. (Rubbo Embrocation) ..	xxiv	Page, Chas., & Co., Ld. (Chemicals)	ix	Standen & Perks (Lister Wavers and Stoves) .....	23
Kerfoot, T., & Co., Ld. (Catarrh Lozenges) .....	17	Patent Phosphates and Merchandise, Ld. (Honey) .....	6	Sterns, Ld. (Oils, Petroleum, &c.) ..	39
King, J. C., Ld. (Duplicate Books, &c.) .....	36	Pazo Co. (Pill Boxes) .....	37	Stubbs, W. B., & Son (Delivery Trucks) .....	xxvii
Kirby, Douglas & Co., Ld. (D.P. Bobber) .....	26	Pears, A. & F., Ld. (Slogan Com-petition) .....	29	Surgical Hosiery Co., Ld. ....	42
La Industrial Resinera Ruth (Synthetic Camphor) .....	xii	Perry & Hope, Ld. ....	52	Swales, Thomas (Hot Water Bottles)	40
Lamb & Watt, Ld. (Wines) .....	9	Pharmaceutical Lanoline Co. (Lano-line) .....	38	Tatcho-Tone Co. ....	32
Lang, Jules, & Son (Glassware) .....	46	Pierson, Morrell & Co., Ld. (Aspirin)	vii	Tennants (Lancs.), Ld. (Chemicals)	x
Lauder, T. (Machinery) .....	xxvii	Potter & Clarke, Ld. (Packed Herbs)	45	Thermogene Co., Ld. ....	i
Lechner, L. (Grease Paints, &c.) ..	33	Prescriber, The .....	xvi	Thornton & Ross, Ld. (Ammonia) ..	vii
Leigh, R. & H., & Sons, Ld. (Carboy Stand) .....	xxvii	Price, A. S., & Co., Ld. (Olive Oil) ..	xxiv	Tomlinson, T., & Son (Valuers, &c.) Col. Supp.	
Lérys (Perfumery) .....	35	Prideaux's Pure Casein Co., Ld. (Milk Food) .....	48	Tyrer, T., & Co., Ld. (Chemicals) ..	iii
Lewis, H. K., & Co., Ld. (Books) ..	52	Quelch & Gambles, Ld. (Boncilla Toilet Preps, &c.) .....	21-26	United Alkali Co., Ld. (Chemicals) ..	vii
Lincoln & Midland Counties Drug Co., Ld. (Clarke's Blood Mixture) ..	xxii	Rayner & Co., Ld. (Olive Oil) ..	38	Van Der Hoeks (Bottles) .....	51
Liverpool School of Pharmacy .....	xxix	Reddgrave, Butler & Co. (Russolax)	38	Venesta, Ld. (Collapsible Tubes) ..	xxviii
Lloyd, Aimée, & Co. (Euxesis) ..	23	Reeve, Angel H., & Co., Ld. (Filter Papers) .....	37	Veno Drug Co. (1925), Ld. (Germo-lene, &c.) .....	xix
Lofthouse & Saltmer, Ld. (Tablets) ..	x	Roberts & Newton (Labels, &c.) ..	xxviii	Vinolia Co., Ld. (Shaving Cream) ..	27
London College of Pharmacy .....	xxix	Roberts' Patent Filling Machine Co.	xxvii	Viscose Development Co., Ld. (Bottle Cappings) .....	xxix
Macandrews & Forbes, Ld. (Apollo Liquorice) .....	x	Robinson & Sons, Ld. (Boxes) ..	Text	Vultex-Products, Ld. ("Vulpro" Goods) .....	5
McGlashan, D., Ld. (Abdine) .....	xvi	Rolls Razor, Ld. (Rolls Razor) ..	31	Waide, Thos., & Sons, Ld. (Printers, &c.) .....	54
MacLellan, G., & Co., Ld. (Air Cushions, &c.) .....	42	Rose, J. L., Ld. (Pyrogallie Acid) ..	52	Wampole, H. K., & Co., Ld. (Pharm. Products) .....	xxii
Manchester School of Pharmacy ..	xxxii	Rowland, A., & Sons, Ld. (Macassar Oil) .....	23	Wander, A., Ld. (Malt Extract, &c.)	3
Mandall & Co., Ld. (Licoricine) ..	xxii	Royle, J. W., Ld. (Mineral Waters) ..	46	Ward & Goldstone, Ld. (Wireless Sets, &c.) .....	7
Marsden, Chas. C. (Valuer, &c.) Col. Supp.		Rudduck & Co. (Shopfittings) Col. Supp.	46	Wardle Cotton Co., Ld. (Surgical Dressings) .....	43
Matthews, D., & Son .....	Col. Supp.	Saltrates, Ld. (Reudel Bath Saltrates)	24	Warne, W., & Co., Ld. (Surgical Goods) .....	42
Matthews, Stephen, & Co., Ld. (Curri-cones) .....	xxviii	Sandoz Chemical Co., Ld. (Alkaloids)	xxiii	Warrington Chem. & Drug Co. ....	vi
Maund, F. (Showcases) .....	xxvi	School of Chiropody .....	xxix	Watts, J. (Safety Razor Blades) ..	28
Maw, S., Son & Sons, Ld. ....	11	School of Optics, Ld. ....	xxix	Westminster College of Pharmacy	xxix
Mawson & Proctor, Ld. (Majax) ..	46	Schutz, F., & Co., Ld. (Soothers)	xxvii	Wheeler & Huisking, Ld. (Ess. Oils, &c.) .....	xxiii
May, Roberts & Co., Ld. (Hot Water Bottles) .....	xxxiv	Scruton, Oscar, & Co. (Nurse Har-vey's Mixture) .....	46	Whitaker & Co. (Hat Dyes, House-hold Dyes) .....	12
Meade-King, Robinson & Co., Ld. (Petroleum Jelly, &c.) .....	36	Scurr, C. A. (Optical Tuition) ..	xxix	White, A., & Sons, Ld. (Chemicals) ..	vi
Methylating Co., Ld. (Methylated Spirit) .....	37	Shadeine Co. (Hair Dyes) .....	23	Wigglesworth, Ld. (Cough Syrup) ..	1
Miller, A., & Co., Ld. (Orange Wine)	52	Shawyer & Co. (Developing, &c.) ..	xxix	Wilkinson, S. W., & Co. (Machinery)	xxvii
Morny Frères, Ld. (Toilet Preps.)	Cover	Sherborne, T., & Co., Ld. (Surgical Appliances) .....	42	Williamson Bros. (Powder Puffs) ..	18
Napp, H. R., Ld. (Santonin) .....	xvii	Sherley, A. F., & Co., Ld. (Dog Medicines) .....	xxx	Wood Bros. Glass Co., Ld. (Bottles)	8
National Drug & Chemical Union Col. Supp.		Showcard Specialists, The .....	54	Wood, Vincent (Bandages) .....	42
Nieso Eagle Razor Blade Co. ....	18	Simon, Harold J. (Safety Razor) ..	32	Wright Bros. (Boxes) .....	51
Ofome Co., Ld. (Ofome Cleanser) ..	14	Simond, S. D., & Co., Ld. (Tapon)	xxviii	Wright, Layman & Umney, Ld. (Wright's Coal Tar Soap, &c.) Cover	
O-Pine-O Manfg. Co., Ld. (Toilet Preps.) .....	32	Slack, A. Bernard .....	Col. Supp.	Youldon, F. (Bottles) .....	51
		Smith & Co. (Flycatchers) .....	xxx	Zeal, G. H., Ld. (Clinical Thermo-meters) .....	41
		Smith, T. & H., Ld. (Chemicals) ..	ii		
		Soc. Voor Chemische Industrie (Theo-bromine, &c.) .....	xii		
		Southall Bros. & Barclay, Ld. (Capsogen) .....	10		
		Spatula Publishing Co. (Books) ..	xxxii		

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# "GOLTONE" RECEIVING SETS & COMPONENT PARTS

Regd.

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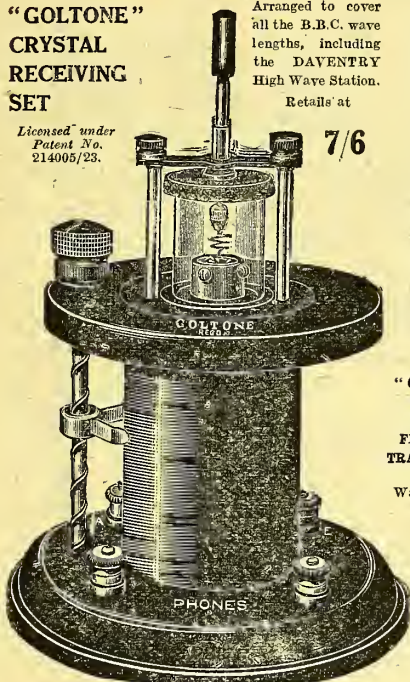
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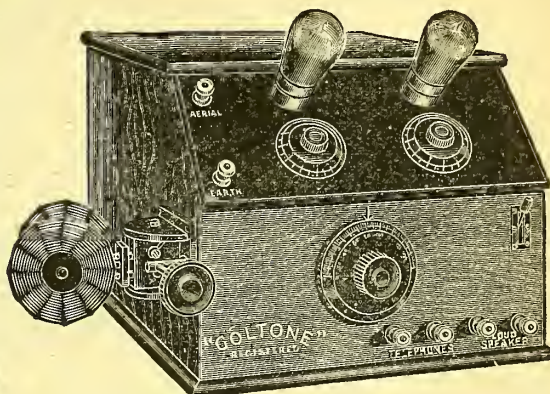
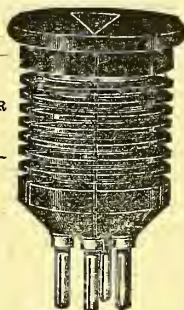
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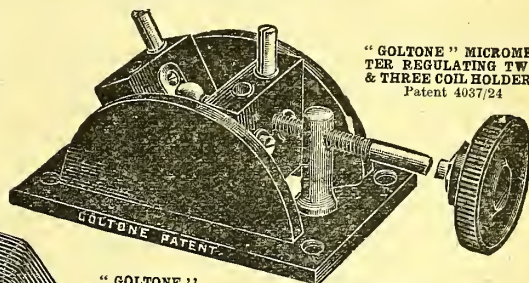


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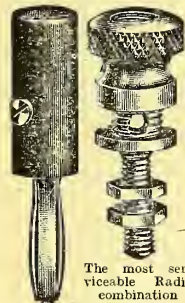
Supplied in Open and Enclosed Cabinets, wide range, from 50/- per set.

## "GOLTONE" MICROMETER REGULATING TWO & THREE COIL HOLDERS

Patent 4037/24



## TRIPARTITE TERMINAL & "GOLTONE" SPRING PLUG



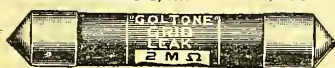
The most serviceable Radio combination introduced

## RADIO WIRES



Silk, Cotton Covered and Enamelled Instrument Wires, Telephone Receiver and Loud Speaker Cords, Aerial Wires, etc.

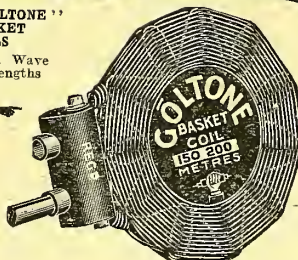
## "GOLTONE" FIXED CONDENSERS, GRID LEAKS, ANODE RESISTANCES, etc.



Each unit laboratory tested.

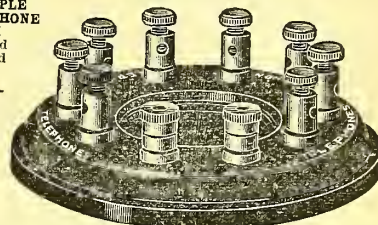
## "GOLTONE" BASKET COILS

All Wave Lengths

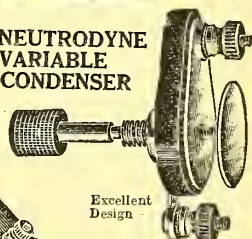


## "GOLTONE" MULTIPLE TELEPHONE BLOCK

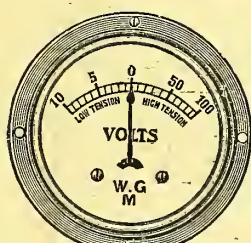
Moulded Polished Base



## NEUTRODYNE VARIABLE CONDENSER



Excellent Design



## PANEL MOUNTING RADIO METER, CENTRE ZERO, FLUSH TYPE

Records both the High Tension and Low Tension Voltages



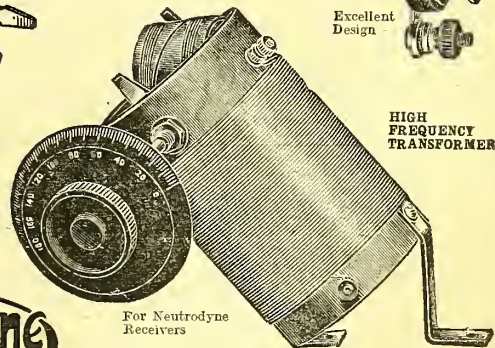
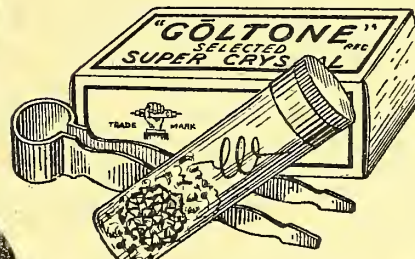
## "GOLTONE" LOUD SPEAKERS

Unequalled for volume of sound and purity of tone. Wide range

## "GOLTONE" The Best of all Crystals. Complete with Cat Whiskers and Tweezers

Retails at

1/-



## HIGH FREQUENCY TRANSFORMER

For Neutrodyne Receivers

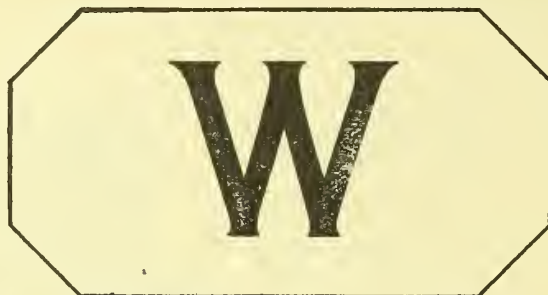
**Ward & Goldstone**  
PENDLETON MANCHESTER LTD.

See Catalogue R/112 for full details.

Stocks also held at Glasgow Depot: 95 PITT STREET.

Address all communications to Head Office and Works: PENDLETON, MANCHESTER.

REGISTERED



TRADE MARK

## PHARMACEUTICAL BOTTLES

### *The Importance of Good Bottles*

THE things which come first with the progressive Pharmacist are the purity of his drugs, the accuracy of his dispensing, and the appearance of his premises and of the preparations he sells. All are affected by the bottles he uses.

It is no use buying the best drugs if they are to be contaminated by the bottles in which they are dispensed. The risk of this contamination has been demonstrated in the Law Courts.

The fine shop front attracts the customer, but its appeal must be supported by handsome bottles.

Finally it is the appearance of the medicine container in the sickroom which makes the lasting impression.

BUY  BOTTLES

Accurate in Capacity. Free from  
Arsenic and Lead. Without equal in  
:: quality and appearance ::

SOLD BY ALL THE LEADING WHOLESALE HOUSES

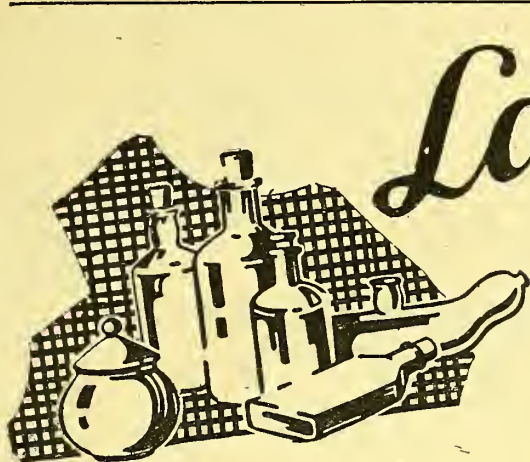
## WOOD BROTHERS GLASS COY., LTD.

(Established 1828)

BARNSELY

- - - -

ENGLAND



*Lang's*

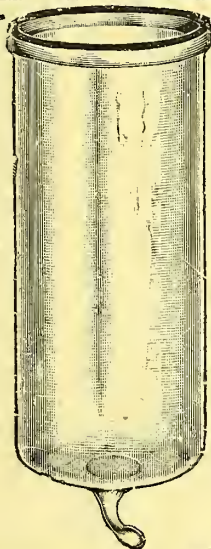
# BARGAIN PAGE

**SPECIAL CLEARING PRICES** *Fair quantities of each line at present in stock*

ASPIRATORS	1,000 c.c. 6d.	2,000 c.c. 1/-	4,000 c.c. 1/6	8,000 c.c. 2/-	EACH NETT.
BURETTES, with Stopcock		25 c.c. 6d.	50 c.c. 1/-	100 c.c. 1/6	EACH NETT.
STOPPERED CYLINDRICAL MEASURES	100 c.c. 1/-	200 c.c. 1/6	250 c.c. 2/-	500 c.c. 2/3	1,000 c.c. 3/-
UNSTOPPERED Ditto	200 c.c. 1/-	250 c.c. 1/6	500 c.c. 1/9	1,000 c.c. 2/6	EACH NETT.

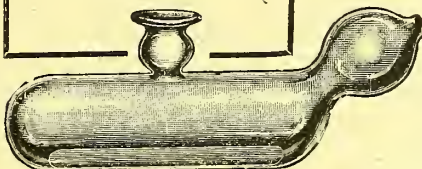
**GLASS DOUCHE LININGS**

2 pt. 3 pt. 4 pt.  
4d. 6d. 8d. each nett.



**NASAL DOUCHES**

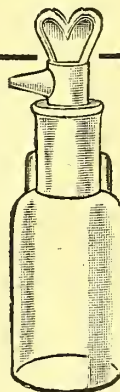
19/6 per gross nett.



**DROPPING BOTTLES**

Amber T. K. Pattern.

1/2 oz. 1 oz. 2 oz.  
10/- 12/6 15/6  
per gross nett.



**NIPPLE SHIELDS 12/- PER GROSS NETT.**

THE FOLLOWING IS AN  
**EXCEPTIONALLY GOOD OFFER.**  
**FLAT-STOPPERED BOTTLES.**

*Similar to Re-agents.*

Wide mouth	1/2 oz.	2 oz.	4 oz.	6 oz.	8 oz.	10 oz.	12 oz.
	8/-	10/6	12/6	15/-	20/-	25/-	30/-
	gross nett.						
Narrow mouth	1/2 oz.	1 oz.	2 oz.	4 oz.	6 oz.	10 oz.	12 oz.
	7/6	9/-	10/-	12/-	14/6	23/-	28/-
	gross nett.						

**ALL PRICES FREE LONDON EX STOCK.**

FAIR QUANTITIES  
ONLY SUPPLIED  
TO THE WHOLE-  
SALE TRADE.  
NO RETAILERS  
SUPPLIED.

**Jules LANG & SON**

CHARLTON WORKS,

CHARLTON PLACE, ISLINGTON, N.

Phone: Clerkenwell 8770 (3 lines).

Grams: "Assorted, Phone, London."

MORE  
BARGAINS  
NEXT  
WEEK:  
LOOK OUT  
FOR THEM.

# "CAPSOGEN"

(REGISTERED)

FOR

MUSCULAR RHEUMATISM, PNEUMONIA,  
PLEURISY, TONSILITIS, LARYNGITIS



"Capsogen" is pure absorbent Wool entirely encased in a sleeve of Gauze, and impregnated with essence of Capsicum. The properties of the drug are preserved with the additional advantage of easy and clean application. Used wet or dry according to the need for vigorous action, or mild prolonged effect.

## Note the Terms:

	COSTS YOU	YIELDS
6 doz. 1s. 3d. size 1 doz. ditto as Bonus	£3 1 6	£5 5 0
3 doz. 3s. 0d. size 1 doz. 1s. 3d. Bonus.	£3 15 0	£6 3 0

Telegrams: "Southall, Birmingham."

Telephone: Centra! 1272.

Southall Bros.  
& Barclay Ltd.  
BIRMINGHAM.

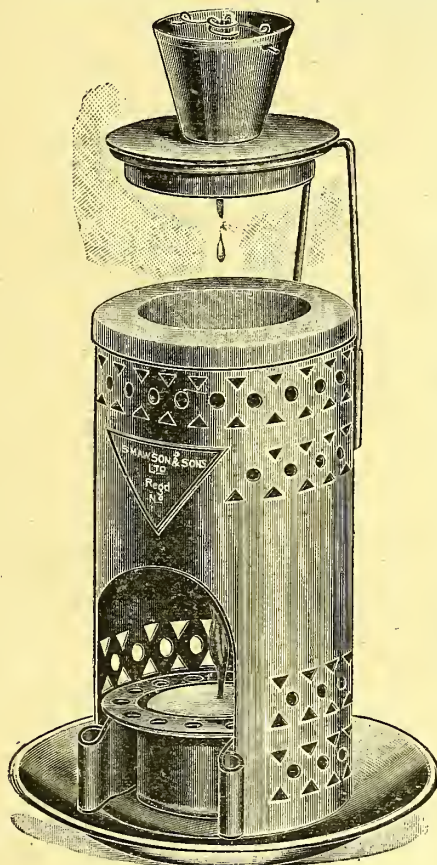


# Maw's Page

## A Winter Line with Repeat Business.

Every season our Drip-Feed Vapour Lamp becomes more and more popular. The recurring epidemics of influenza, whooping cough and other winter ailments have made it almost indispensable to the average household.

A worried mother will often go to her chemist for advice because her child has such difficulty in breathing at night, and in such cases Maw's Drip-Feed Lamp should be recommended. For efficiency, safety and convenience it is without equal.



Last season we added a further improvement to the lamp. It is an adjustment for the night light. Some night lights burn better than others and therefore vaporise the liquid more satisfactorily. With a weak night light the lamp does not vaporise so well. The simple spring arrangement by which it is possible to move the night light closer to the vaporising tray thus accelerates the vaporisation.

Maw's Aero-Cotarol which is sold in conjunction with the Drip-Feed Lamp is a line which brings in constant repeat business and it carries a profit which makes it well worth while.

### PRICES.

	Wholesale.	Retail.
<b>Drip-Feed Lamp</b>	20/- doz.	2/6
In 3 doz. lots	.. 19/- ..	
<b>Aero-Cotarol</b>		
Large size	.. 18/- ..	2/3 per bottle
Small size	.. 10/- ..	1/3 ..

Night Lights specially suitable for the Drip-Feed Lamp. In boxes of six. Per dozen boxes, 6/-. Maw's Drip-Feed Lamp is protected by Patents No. 170463 and 12483/24.

*N.B.—Heat adjustment springs supplied free for your present stock of lamps on application.*

**S. Maw, Son & Sons, Ltd.,**  
Aldersgate St., London,  
and Barnet.



## Whitakerisms No. 1.



## An Autumn Proposal

IT is an old saying that there is no time like the present. Our proposal is a simple one. In view of the present demand for both "Luton" and "Auroral" Dyes for Fancy Dress purposes, and "Velt" for cleaning, will you be unusually careful to see that your supplies do not at any rate fall below your usual summer standard?

There's a reason, and

A Winter Stock of Whitaker Products is Most Important

**"AURORAL"**  
DYES

Cold Water

JUST THE THING FOR DYEING DANCE AND PARTY FROCKS.

Good trade should be done in this line now by recommending it for this purpose to your customers. Recognized as the finest cold-water dyes in the world for delicate and costly fabrics. Good results obtained even at the first trial. A certain seller.

**"LUTON"**

FABRIC DYES

Hot Water

The best hot-water dyes for all materials, giving perfect results with the minimum of trouble. As with all other Whitaker products they show a good profit.

**"LUTON"**

STRAW HAT  
DYES

The outcome of 45 years' accumulated experience in the manufacture of household dyes. Supplied in dull or glossy series.

**VELT**

THE NEW  
CLEANER

A cleaning preparation for removing stains, grease, dirt, etc., from clothing, upholstery, curtains, etc., and renovating them. VELT is a non-inflammable liquid and is supplied in screw tins of which three dozens are contained in an attractive outer. A new Whitaker product but nevertheless one which is already selling well.

ALL CASES AND CONTAINERS FREE.

**WHITAKER & CO.** Dye Specialists for Chemists, **KENDAL**

Telegrams: "Dullette, Kendal."

Established 1878.

Telephone 214.

London Office and Showrooms: 61 & 62 Craven House, KINGSWAY, W.C.2

Telephone: Gerrard 1714.

Evans Sons Lescher & Webb Ltd.

## SHOP FITTINGS

*of every description  
for the Pharmacy*

IF you contemplate opening a new PHARMACY or remodelling an established business, we are prepared to assist you with designs and quotations, based on our unique experience as CHEMISTS' SHOPFITTERS with inside knowledge of the requirements of the TRADE.

Our Expert always at your service.

Competent fitters sent to all parts.

### EXTERIORS

SHOP FRONTS  
GLASS SIGNS  
GLASS TABLETS  
LEADED LIGHTS  
RUBBER ENTRANCES  
RUBBER MATS  
GILT WOOD LETTERS  
SUN BLINDS  
Etc., Etc.

### INTERIORS

WALL CASES  
DRUG RANGES  
BOTTLE SHELVES  
COUNTERS  
COUNTER CASES  
DISPENSING SCREENS  
SPONGE CASES  
SILENT SALESMEN  
Etc., Etc.

LIVERPOOL LONDON

NEW YORK



# OFOME

*The Wonderful New Cleanser  
in a Tube*

is

## NON-INFLAMMABLE

WE wish to stress this important point. We believe it will be worth your while to point this out to every customer buying Ofome from *your* shop.

OFOME cleans  
practically everything  
in the Home.

HANDS — CLOTHES — CARPETS — PAINT — ENAMEL — MARBLE — BRUSHES — THE INSIDE AND OUTSIDE OF MOTORS are all cleaned rapidly and easily with Ofome.

Ofome will rapidly become a household necessity. Backed by a vigorous advertising campaign commencing during the first week in October, it will sell quickly and will bring many customers to your shop.



**STRIKING  
COLOURED SHOWCARDS**

Size 11 in. by 7  $\frac{3}{4}$  in.

and

**ATTRACTIVE CARTONS**

to help you. Write to the

**OFOME COMPANY, LTD.,**

16a, Newman Street, London, W.1.

*Order now and make certain that your customers  
come to you for Ofome*

**THE OFOME CO. LTD., 16a, Newman Street, London, W.1**

C.F.H.

USE THE

**Ronoleke**

**HOT WATER BOTTLE**  
WITH CAPTIVE STOPPER

THE  
RONOLEKE  
GIVES YOU  
REAL BED  
COMFORT

Size 12"x8"

**6/9**



RELIEVES  
PAIN  
NEURALGIA  
INFLUENZA  
CHILLS ETC

FROM  
CHEMISTS  
& RUBBER  
SHOPS

**IT LASTS FOR YEARS  
AND NEVER LEAKS**

IF ANY DIFFICULTY IN OBTAINING WRITE TO THE MANUFACTURERS:  
CAMPBELL, ACHNACH & CO., LTD., WALLACE STREET, GLASGOW.

### WORKING FOR YOU

The above advertisement is appearing in all the leading magazines right up to the new year. There is big business for you in this advertising if you will take advantage of it. A little enterprise produces a big profit if you strike while the iron is hot. Remember that this "Ronoleke" advertising is sending customers to your counter, so be prepared and enjoy your share of the increased business this advertising will bring to you. Prices are reduced and there is a good supply of effective show matter. We are doing all we can to make sales easy and plentiful for you. Get full particulars from your wholesaler or direct from the manufacturers.

CAMPBELL, ACHNACH & CO. LTD.  
WALLACE STREET, GLASGOW



# Going up!

The sales of "GRIPS" FIRST-AID PASTILLES keep steadily on their upward course. Each year sees the creation of new sales records, and the present phenomenal demand indicates that this season will be but another milestone on the road of progress.

STOCK "GRIPS" FIRST-AID PASTILLES NOW, and let genial Dr. Grip open your door to this new and ever-increasing business. Your wholesaler can supply you.

## 'GRIPS'

### FIRST-AID PASTILLES

*Distributing Agents to the Wholesale and Retail  
Chemists' Trade—*

**THOS. CHRISTY & CO.,**  
4-12 Old Swan Lane,  
London, E.C.4



**The Trade's Best Seller!**



# A DISTINCTIVE SETTING

## *for distinguished products*

### BLUE, GOLD & IVORY

The "Ivory" Tin Series presents hand-made Lozenges of the highest quality admirably packed for display purposes. The colour scheme of "Ivory" tins contrasted with the rich blue and gold outer is both striking and artistic. (See illustration in actual colours on page 7 of our Autumn Price List.) Prepared from approved formulæ under ideal conditions, the Lozenges themselves can be recommended with complete confidence.

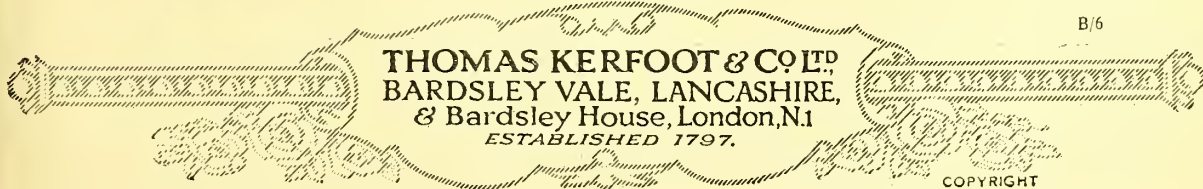


### THE "IVORY" LOZENGE SERIES

CATARRH	}	9d. tins P.A.T.A.
BRONCHIAL		
PEPPERMINT		

Display outers of 1 dozen  
5/6 per dozen      6 dozen 5/3 dozen

*Kerfoot Quality is Chemists' Quality*





Before finally placing your orders we beg to draw your attention to the following exquisite lines in

## CHRISTMAS PERFUMERY

*Lilas Lilas,  
Violette de Cannes,  
Rose de Cannes,  
Cœur d'Yvonne,  
Persian Garden,  
Scents of Araby.*

All these perfumes, which are of the highest standard, are presented in the most modern French styles, and are works of art which should be a pleasure to any chemist to handle.

The retail prices range from 2/6 upwards, and they show a handsome margin of profit.

IF OUR TRAVELLER IS NOT CALLING UPON YOU REGULARLY DROP US A LINE AND WE WILL MAKE ARRANGEMENTS FOR HIM TO VISIT YOU AT AN EARLY DATE.

THIS WILL INVOLVE YOU IN  
NO OBLIGATION.

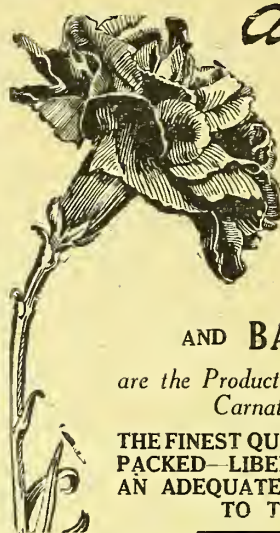
## SPURWAY ET CIE, LTD.

89 Great Eastern Street,  
LONDON :: :: E.C.2.

CANNES-GRASSE, RIVIERA.  
PARIS.

LEIPSIK NEW YORK  
KINGSTON (ONTARIO)

Telegrams - "NEROLI, LONDON."  
Telephone - BISHOPSGATE 1372.



*Allwood Bros*

CARNATION  
PERFUME  
POT POURRI  
CARNATION  
SACHETS

AND BATH CRYSTALS

are the Products of the World's Leading  
Carnation Specialists.

THE FINEST QUALITY—DELIGHTFULLY  
PACKED—LIBERAL SALES AIDS—AND  
AN ADEQUATE MARGIN OF PROFIT  
TO THE CHEMIST.

Please write for particulars and Trade Terms to

*Allwood Bros*

THE WORLD'S LEADING CARNATION  
—RAISERS AND SPECIALISTS—

HAYWARDS HEATH, SUSSEX



*Send for free sample*

**NIESO EAGLE  
RAZOR BLADE**

Our "Direct to the Public" Advertising has created the demand which you must share. A post-card brings a specimen blade and generous trade terms. - Address:

NIESO EAGLE RAZOR BLADE CO.  
17 Bartholomew Close, London, E.C.1

## POWDER PUFFS

THE PRINCIPAL  
MANUFACTURERS OF NOVELTIES.

**WILLIAMSON BROS.**

126 SOUTHWARK STREET, S.E.1.

HOP 3419.

**Look for the SEAL**

**on the label**

**on every Bottle**

FOR sweet and dainty freshness there is no perfume to compare with the pure and perfectly blended Eau de Cologne made by Johann Maria Farina, whose ancestor-invented and first sold the perfume in 1709. Its pedigree thus runs into three centuries. Every Royal Court in Europe has been supplied by appointment with the

**Original & Genuine EAU de COLOGNE**

ESTABLISHED 1709

No label has been more widely copied than the famous Farina label. The new and improved label bears the mark "ORI-GEN" in bold letters. As long as the seal is on the label, you know that you are buying the genuine article. Look for the Seal!

From 2/6 to 50/- a bottle, all leading chemists and druggists.

**Confident wherever she goes—she looks for the ORI-GEN SEAL.**

She knows the comfort and the advantages which belong to the woman whose dainty freshness is enhanced by the perfume which the world has acknowledged supreme—the Original and Genuine Eau de Cologne which bears the name of Johann Maria Farina—and the ORI-GEN SEAL. You will find it in your pocket. The ORI-GEN SEAL is your protection. You will find it on the famous Farina label—the label which has been more widely copied than any other. The ORI-GEN SEAL proves that you are getting the purest and most perfectly blended Eau de Cologne in the world, with a pedigree running through three centuries.

**Original & Genuine EAU de COLOGNE**

ESTABLISHED 1709

First sold in 1709 by Johann Maria Farina, apothecary to the greatest emperors. It has been accepted by appointment as court perfume ever since. Be sure the label is there.

From 2/6 to 50/- a bottle

at all leading Chemists and Druggists, including all branches of Messrs. Blackall & Plesance, 8, Laurence Pountney Hill, Cannon Street, E.C. 4.

Trade Exporters to  
BLACKALL & PLEASANCE, 8, LAURENCE POUNTNEY HILL, CANNON STREET, E.C. 4



TRADE

MARK

# Stimulating the demand for the famous EAU de COLOGNE used over 200 years ago.

The attractive advertisements now appearing for the Original and Genuine Eau de Cologne are enlarging by leaps and bounds the already wide circle of discriminating users.

These announcements continue to inform consumers of the wholesale pirating of the famous Farina label and of the necessity to look for the ORI-GEN seal on every label as a means of identifying the genuine article.

To sell the Original and Genuine Eau de Cologne is to satisfy customers and get repeat orders.

Remember this famous brand has been used by every Royal Court in Europe and all classes for over 200 years.

## Be ready for the increased business by stocking Original & Genuine EAU de COLOGNE

ESTABLISHED 1709.

If you are not stocking, send to-day for full particulars of lowest terms, &c., showing a handsome profit, to

**BLACKALLER & PLEASANCE,**  
8, LAURENCE POUNTNEY HILL, CANNON STREET,  
LONDON, E.C. 4.

THE FAMOUS FARINA LABEL





*Mysore Government Seal  
is your guarantee that  
the Oil is the finest in  
the World*

## EAST INDIAN SANDALWOOD OIL

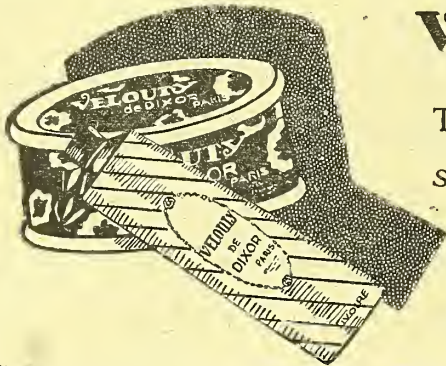
*Sole European Distributors:*

### ESSENFLOUR PRODUCTS LTD.

"Perfume House" 6, 7 & 8 BEAUCHAMP STREET, LONDON, E.C.1

Telephone: HO1, BORN 2499, 6214, 6215 (3 lines).

Telegrams: "EKDUM, LONDON."



## VELOUTY de DIXOR PARIS ..

### COMBINED CREAM AND POWDER

The advertised line that you are asked for.

DAINTY PRESENTATION.

Samples free upon receipt of tradecard or billhead.

Prices.—Full size pot	21/- doz.	Retail .. ..	2/9
Super Tube	22/- "	" .. ..	3/-
Large "	14/- "	" .. ..	2/-
Handbag "	3/- "	" .. ..	6d.

Obtainable from your regular Wholesaler or direct from the Sole British Agents:  
DEBACQ & HARROP, 7 Little Goodge Street, LONDON, W.1

## DODGE & OLCOTT CO.,

20 MARK LANE,  
LONDON, E.C.3.

### THE "D & O" BRAND

*is the "Standard of Quality" for*

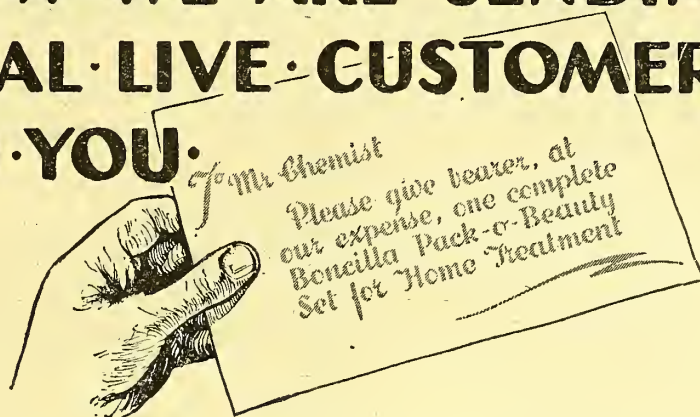
OILS of BAY, CEDARWOOD, PATCHOULI, PEPPERMINT,  
SASSAFRAS, ETC.

BALSAMS of Copaiba, Peru, Tolu.  
TONKA BEANS, Angosturas.

Phone—  
ROYAL 3843.

Telegrams—  
"EGDARF, FEN, LONDON."

# HOW · WE · ARE · SENDING REAL · LIVE · CUSTOMERS TO · YOU.



**W**E are giving this voucher away in hundreds. It is sent free to women throughout the land in exchange for three coupons taken from any of the exquisite Boncilla Toilet Preparations. We ask them to bring you the voucher. We advise you that Miss So-and-So will be calling to get her Boncilla "Pack-o-Beauty" for home Beauty Treatment; we send you the "Pack-o-Beauty" in exchange for her voucher, to hand over to her.

Now look at the points of this scheme!

(1) One of the most ingenious advertising schemes is behind this plan, in which the papers most appealing to women are used, running into several thousands of pounds.

(2) We send you customers who will return again and again for Boncilla preparations.

(3) Each applicant for a free Boncilla "Pack-o-Beauty" has already bought three Boncilla preparations in order to get the voucher. Four visits to your counter!

(4) We send you the Boncilla "Pack-o-Beauty" for her, and ask you to hand it to her yourself, with your compliments. Thus a definite link is forged between you and your Boncilla customers.

**All you have to do.** When Miss So-and-So calls you take from her her voucher (our signed authority), we having already sent you a 2/6 "Pack-o-Beauty" which you hand over to her.

## Boncilla TOILET PREPARATIONS

### BONCILLA PRICES LIST

No.		Wholesale	Retail	No.		Wholesale	Retail
1.	Boncilla Beautifier	- 10/- doz.	1/3	2.	Boncilla Vanishing Cream	- 28/- doz.	3/6
7.	"	- 36/- "	4/6	2.	" Complexion Powder	- 28/- "	3/6
3.	"	- 36/- "	4/6	5.	" Lemon Cream	- 28/- "	3/6
5.	"	- 60/- "	7/6	"	" "Pack-o-Beauty"	- 20/- "	2/6
1.	" Cold Cream	- 11/- "	1/3	37.	Complete Set	- 108/- "	13/6
2.	"	- 28/- "	3/6	23.	"	- 72/- "	9/-
1.	" Vanishing Cream	- 11/- "	1/3		Boncilla Soap	- 10/- "	1/3

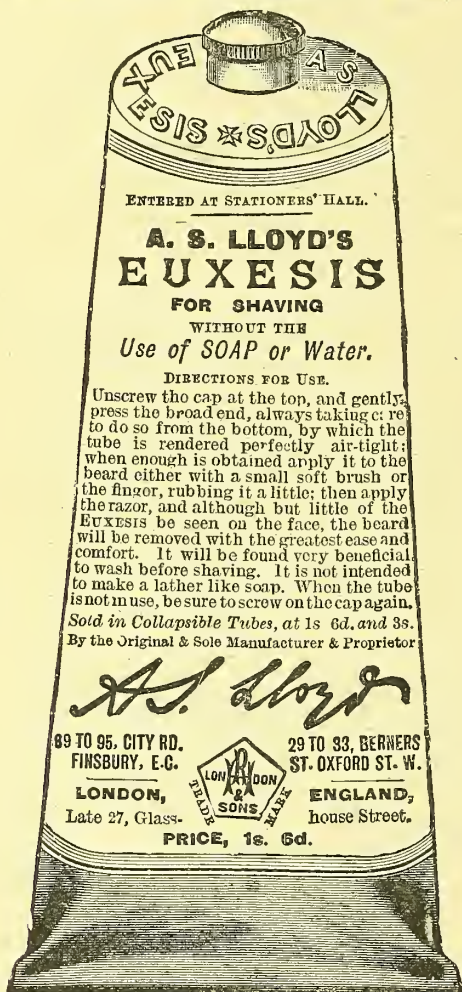
N.B.—With all orders of 35/- and over will be sent, free of charge,  
3 Boncilla "Pack-o-Beauty" sets (value 7/6) as Bonus.

**BONCILLA LABORATORIES.** SOLE AGENTS; **QUELCH & GAMBLES, Ltd.**  
211-215 Blackfriars Road, LONDON, S.E.1.

# A. S. LLOYD'S EUXESIS

(THE GENUINE).

For Shaving without Soap, Water, or Brush.



Sold by all Perfumers and Chemists throughout the World.

R. HOVENDEN & SONS having purchased, under an administration suit, the Business of the late A. S. LLOYD, with the Receipt, Trade-Mark, and Goodwill of the celebrated Euxesis, the Trade are cautioned that the original and genuine Euxesis is now manufactured at our Factory ONLY and may be obtained at either of our Warehouses.

PRICES ON APPLICATION.

NOTICE.—THE GENUINE A. S. LLOYD'S EUXESIS bears a label printed in BLACK only on a Yellow ground, with our Trade Mark at the bottom, as illustration.

Proprietors: R. HOVENDEN & SONS, LTD.

LONDON: 89-95 City Road, E.C.1; and 29-33 Berners Street W.1

## DEARBORN (1923) LTD.

37 Gray's Inn Road, London, W.C.1

### Toilet Specialties.

	Price per doz. to Retailer	Selling Price P.A.T.A.
PILENTA SOAP ..	10/-	1/-
A complexion soap.		
PROLACTUM ..	10/-	1/-
For the lips.		
PARSIDIUM JELLY ..	10/-	1/-
For wrinkles.		
ALLACITE OF ORANGE BLOSSOM ..	22/6	2/6
A dressing cream.		
BORANIUM ..	22/6	2/6
A hair tonic.		
CLEMINITE ..	22/6	2/6
For a face lotion.		
COLLIANDUM ..	22/6	2/6
For a face tint.		
PERGOL ..	22/6	2/6
A deodorant.		
TEKKO PASTE ..	22/6	2/6
Camphor cream.		
STALLAX ..	13/6	1/6
For a shampoo.		
JETTALINE ..	31/6	3/6
For clearing the skin.		
PHEMINOL ..	36/-	4/-
A depilatory.		
MENNALINE ..	36/-	4/-
For the eyelashes.		
MERCOLIZED WAX ..	18/-	2/-
A face cream.		
STYMOL ..	36/-	4/-
For oily complexions and blackheads.		
SILMERINE ..	22/6	2/6
Hair-curling fluid.		
BARSYDE ..	22/6	2/6
Dandruff eradicator.		
TAMMALITE ..	22/6	2/6
For grey and faded hair.		
LIQUID PERGOL ..	31/6	3/6
To check excessive perspiration locally.		
BICROLIUM ..	22/6	2/6
For whitening the hands.		
COCONOIDS ..	31/6	3/6
For figure development.		

### The Products of

Messrs. PARKER, BELMONT & CO.

CLYNOL BERRIES ..	36/-	4/-
For obesity.		
SOFT PALERIUM ..	58/6	6/6
For wrinkles.		
LIQUID NAIL POLISH ..	45/-	5/-
Brilliant and lasting.		
	10/-	1/-

Stocked by ALL Wholesale Houses.

### COLONIAL DEPOTS AND AGENCIES.

Australia: ALL WHOLESALE, & DEARBORN (Australia), Ltd., Grace House, Clarence Street, Sydney.  
 South Africa: LENNON, Ltd., Cape Town, etc.  
 SIVE BROS. & KARNOVSKY, Johannesburg.  
 India: FRAMJEE & SON, Bombay.  
 A. L. CHOUDRY, Calcutta.  
 New Zealand: SHARLAND & CO., Auckland and Wellington.  
 South America: DEARBORN (South America) Ltd., Calle Pavon 2100, Buenos Aires.  
 Straits Settlements & Federated Malay States: MEDICAL HALL, Ltd., Singapore.

# A. S. LLOYD'S EUXESIS.

For Shaving without Soap, Water, or Brush.

## CAUTION.

The Labels on GENUINE EUXESIS bear two signatures—  
A. S. Lloyd in Black Ink, and that of his Widow,  
Aimée Lloyd, in RED. Refuse any other.

Sole Manufacturers and } **AIMÉE LLOYD & CO.**  
Proprietors:  
**23 PANTON STREET (formerly named Spur Street),**  
**HAYMARKET, LONDON, S.W.**

*N.B.—When ordering from Wholesale Houses write LLOYD'S EUXESIS (WIDOW'S).*

*The Evan Williams*  
ALWAYS IN GREAT DEMAND.  
PRICE LIST ON APPLICATION.  
The EVAN-WILLIAMS Co., Ltd., 14/15 Union St., W.1.  
**ORIGINAL SHAMPOO**

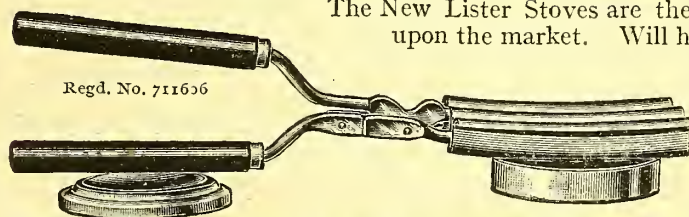
**SHADEINE**  
For COLOURING GREY HAIR  
This popular article is largely advertised  
and stocked by all Wholesale Houses.  
Trial size 6d. per doz. .. .. 6/-  
1/4 size, per doz. .. .. 12/-  
2/8 size, per doz. .. .. 24/-  
3/9 size, per doz. .. .. 36/-  
The SHADEINE CO., 58 Westbourne Grove, London, W.2.



**ROWLAND'S  
MACASSAR OIL**  
*A line it pays to stock.*  
P.A.T.A. 3/6, 7/-, 10/6.  
THROUGH ALL WHOLESALERS.  
**A. Rowland & Sons, Ltd.**  
112 GUILFORD STREET, LONDON, W.C.1.

## LISTER WAVERS & STOVES

The New Lister Stoves are the cheapest and most efficient placed  
upon the market. Will heat any Waver in 30 seconds.



Regd. No. 711606

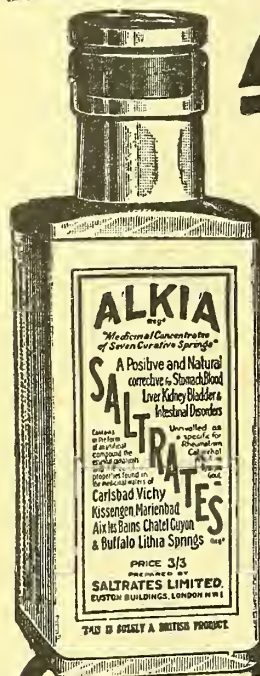
**Safe to Use. Cannot Spill**

Retails at 6d.  
42/- per gross, 3/9 per doz.

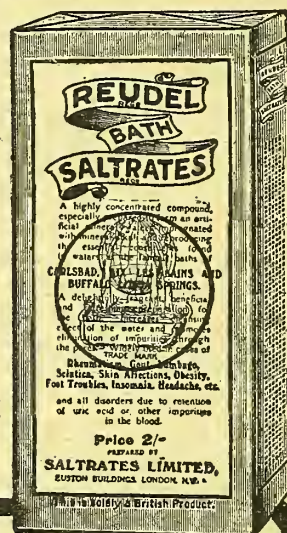
**LISTER HAIR WAVERS** now  
REDUCED to 36/- gross, 3/6 doz.

**STANDEN & PERKS, GT. LISTER ST. BIRMINGHAM**

# Two lines which can be recommended with Absolute Confidence



They always mean a pleased and satisfied customer because they do exactly what our advertisements say.



## ALKIA SALTRATES

The most efficient Saline on the market and the best value for the money. Pleasant tasting and always satisfies the user. Widely advertised for Rheumatism, Gout, Sciatica or any Liver, Kidney, Stomach, Intestinal or Blood Disorders, Catarrhal Affections, etc.

**SELLS AT 3/3 (P.A.T.A.)**

## REUDEL BATH SALTRATES

The best selling and most fragrant, refreshing, beneficial and all-round satisfactory preparation for the bath. Especially recommended in cases of Foot Troubles, Rheumatic Pains, Stiffness, Strains, Sprains, etc. Always extensively advertised.

**SELLS AT 2/- AND 3/3 (P.A.T.A.)**

**NOT COMPOUNDED AS THE CHEAPEST PREPARATIONS OF THEIR KIND BUT THE BEST PRODUCIBLE REGARDLESS OF COST**

## GUARANTEED SALE TERMS

*Free Bonus*  
*Free Cases*  
*Free Carriage*

Carriage Paid and Free Cases in United Kingdom on orders for 3 dozen, which may be assorted. Showcards of strong selling power sent free on request. Display them in your window and attract extra business from our present extensive advertising campaign. Write for particulars of our Special Bonus Terms for WINDOW DISPLAY.

**SALTRATES LIMITED, EUSTON BUILDINGS, LONDON, N.W.1.**

# ENTIRELY NEW LINE

Extensive National Advertising and  
Free Sample Campaign introduces

## “Junofloris” Spring Breath

“Junofloris” is an Entirely New and Original Line which will add **Extra Profit** to your Business. It does not compete with anything in existence, so all your sales will be **ADDITIONAL TO YOUR CUSTOMERS’ USUAL PURCHASES.**

“Junofloris” Spring Breath is a Breath Purifier and Antiseptic Mouth and Stomach Deodorant in Tablet Form—NOT a Cachou, but a scientifically compounded preparation. It quickly overcomes Halitosis (Impure Breath)—is equally valuable for both men and women—and is receiving a remarkable reception from the Public everywhere.

Be among the first in your district to reap the benefit of the **ADDITIONAL** sales which the “Junofloris” advertising campaign is producing all over the United Kingdom.

**Send your Trial Order NOW ! It means NEW BUSINESS  
and therefore EXTRA TURNOVER and BIGGER PROFITS**

**Prices :** *Advertised (minimum Retail) 7½d. & 1/1½ per box.*  
*Makers’ ... .. 6/8 & 12/- per doz.*

Less 20% Discount.

PACKED IN NEAT COUNTER DISPLAY CARTONS OF  
1 DOZ. BOXES WHICH SELL “JUNOFLORIS” AT SIGHT

Ample supplies now available from your usual Wholesaler or the  
*Sole Distributors—*

**EDWARDS’ HARLENE LTD.**  
**20, 22, 24 & 26 Lamb’s Conduit St., London, W.C.1**

*Proprietors of :*

Edwards’ Harlene-for-the-Hair “Cremex” Shampoo Powders “Uzon” Brilliantine, etc., etc.

*A postcard will bring a Trial Supply and illustrated particulars of “Junofloris” Spring Breath, also a complete Price List of all Edwards Harlene Limited preparations.*

THIS MONTH'S SWAN  
DOWN "NAME-SAKE"  
SCHEME.



**The last day of  
September  
is the day  
to post your  
Swan Down  
Name Coupons**



**Make quite  
sure to post  
them all —  
any of them  
may bear the  
winning name  
and bring you  
10/- each**



N.B.—We cannot be responsible for  
Name-Coupons received after October 5



All Enquiries to :—

QUELCH & GAMBLES, LTD.  
211-215 Blackfriars Road,  
London, S.E.1

# Money from Shingled hair!

The widespread fashion for Shingled, Bingled and Bobbed hair provides a wonderful opportunity for selling the D.P. Bobber.

Thousands of girls are now using the D.P. Bobber to keep their hair perfectly trimmed without the expense of going to a hairdresser; thousands more will be using it as a result of our advertisements appearing in the *Daily Mirror*, *Weldon's*, *Good Housekeeping* and the *Strand Magazine*.



Retailers who wish to share in this money-making line should order stocks at once from their usual Wholesaler or direct from the Manufacturers.

**D. P. BOBBER**

Complete with Frame, patent Comb, Plate and Blade.

**Reduced Trade Price 28/- per doz.**

Usual terms. Retail at 3/6 each.

## D.P. BOBBER

DOUGLAS KIRBY  
& CO., LTD.

(DEPT. C.D.)

**ST. JOHN'S LANE, GLOUCESTER.**

Manufacturers also of the Douglas Pruner for men and the Monkey Strop. Trade enquiries for these popular models invited.

# A greatly improved product in a new Wedgwood container

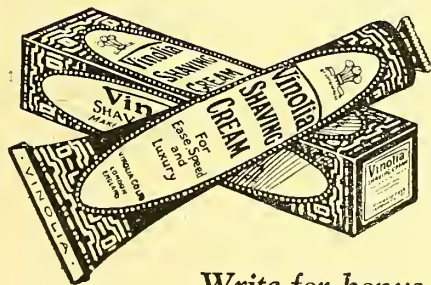
After years of experimenting the perfect Shaving Cream has been produced at last. The new Vinolia Shaving Cream has an unlimited capacity for holding water; it really softens the beard; it possesses a most refreshing perfume and just the right consistency—it does not fall off the face or the brush; it is really luxurious, but economical at the same time.

A Shaving Cream in a new and attractive tube and carton with these definite selling points, backed by persistent advertising, is bound to add to your prestige and profit.

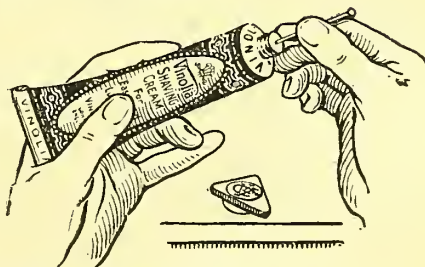
*If you would like to try it for yourself send a postcard for a free trial tube—then you will recommend*

## Vinolia Shaving Cream

*For ease, speed and luxury*



1/6  
13/6 per doz.  
subject to up  
to 10 and  
2½%



*Write for bonus offer—65% best profit on outlay*

VINOLIA CO. LTD., BLACKFRIARS, LONDON, E.C.4.

RV 789-29

# Apology

On account of the Great Popularity of

THE  
NEW  
IMPROVED



MODEL,  
LAMP PUF  
L.P.7

the Factory, which is being extended, has had great difficulty in keeping up with the demand and our customers are asked to accept our apology for the unavoidable delay in delivery of orders.

*Beaverpuf, Ltd. PRIEST BRIDGE, MORTLAKE, S.W.14*

**"TUBELETTE"**  
MENTHOL & WINTERGREEN CREAM

ANGLO-AMERICAN PHARMACEUTICAL CO. LTD.  
EAST CROYDON, SURREY

ON P.A.T.A. with good profits.

THE ORIGINAL BEST KNOWN & LARGEST SELLING IN ENGLAND, SCOTLAND & WALES.

Stocked by all sundry houses.

Anglo-American Pharmaceutical Co. Ltd.  
EAST CROYDON.

NOTE.—"Tubelette" Menthol Wintergreen Cream should not be confused with HUXLEY'S "WINTOGENO" (Menthol, Wintergreen and Eucalyptol) which is a distinct brand and package.

Assist British industry by recommending the 'WATTS' Sheffield-made Safety Razor Blade, the blade of super-keenness.



3/6  
per doz.  
allowing  
50% PROFIT  
on cost for  
the dealer.

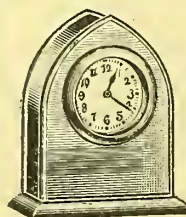
Sole Manufacturers: **JOHN WATTS,**  
Dept. 3, LAMBERT WORKS, SHEFFIELD.  
London: 24, REDCROSS ST., E.C.1.  
Established over 150 years.

A counter display will help.

A user writes: "Can't understand people buying foreign blades when such as yours are obtainable."

12 Perfect Blades  
in Every Dozen

For Gillette-Type and  
Auto-trop-type holders



**YOUR COMPETITORS**  
are selling lots of  
**CLOCKS & WATCHES**

Why don't you?

Single Alarms ... 33/- doz.  
Enamel Fronted Clocks, assorted  
colours, as illustrated 36/- doz.

Largest variety ever offered in stock.  
SEND FOR FULL LISTS.

We can also supply Genuine Gillette Blades, and all leading makes of Safety Razors and Blades. Let us quote you. Our prices are unbeatable. Terms: Net Cash with Order or goods sent against approved refs.

**L. FRANKENBERG,** 15 Stoney Lane, Houndsditch,  
London, E.1. Phone: Avenue 1170.

Extension of Closing Date —

# Pears'

## SLOGAN COMPETITION

In order to give fuller effect to the

## SPECIAL AUTUMN ADVERTISING

of Pears' Unscented Transparent Soap it has been decided to extend the closing date of Pears' Slogan Competition to *October 30*. Entry forms must reach us not later than November 12.

## £50 PRIZE

Photos of Window Shows entered for the £50 Prize must also be in our hands not later than November 12.

A. & F. PEARS, Ltd., 71-75, New Oxford Street, London, W. C. 1.

# **SPECIAL ANNOUNCEMENT**

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Messrs. EUCRYL LIMITED beg to announce that in response to the very numerous requests which have been received from their good friends in the Wholesale and Retail Chemists' Trade, they have now introduced a large size in their already popular selling line

## **EUCRYL DENTURE POWDER**

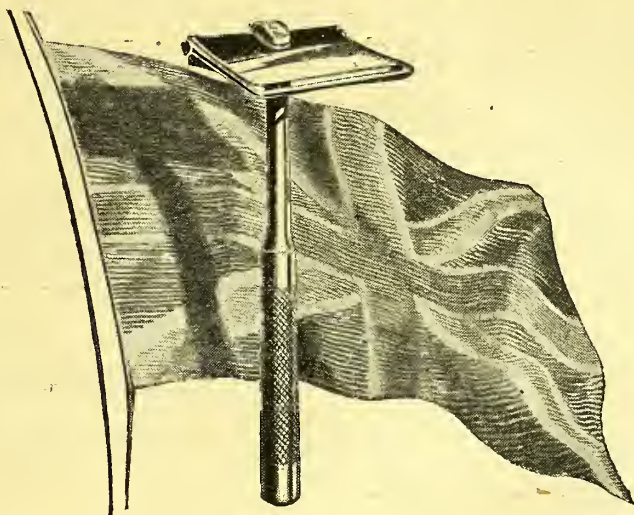
It has been found impossible to make use of a Sprinkler Tin without altering and decreasing the efficiency of the Powder. Consequently, this new size is a large flat tin listed at 8/- a dozen, retailing at 1/- each, on usual full bonus terms.

Further, as a special introductory offer Messrs. EUCRYL LIMITED are prepared to supply on all first orders, 1 dozen only, carriage paid, on full bonus terms.

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**Eucryl Ltd. - Shirley - Southampton**

# Sell the Rolls - a British razor



## Share a British success



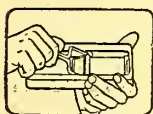
Retailers everywhere are stocking and selling Rolls Razors. These British Safety Razors carry with them a written guarantee that the one hollowground blade will give perfect service for five years. They are self-stropping and self-honing.

The public demand for ROLLS RAZORS is increasing day by day and we are inundated with letters of praise and appreciation. We want to sell through you. Our terms are generous and we can maintain supplies.

Write to us to-day for particulars.

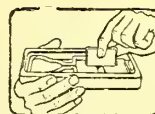
*Its ONE blade is guaranteed for five years.*

# ROLLS RAZOR



Self-stropped  
and honed in  
a few seconds.

ROLLS RAZOR Ltd.  
1, Charing Cross  
London, S.W.1.



Blade attached  
by a simple  
quarter turn.

**Telephone: Axminster 5.**

Telegrams: "Coate, Axminster."

# COATE & CO. (Axminster) Ltd.

**The London Brush Works, Axminster, Devon.**

*Estab. 1847.*

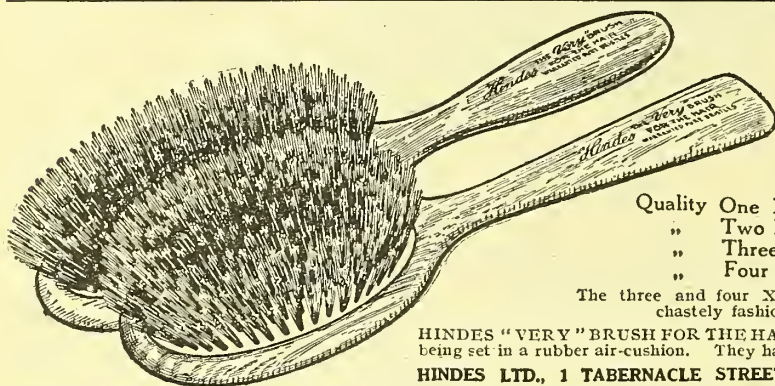
*Manufacturers of Super British Brushes*

Our Special "PROPHYLACTIC" Tooth Brushes—

3 row Hard, Medium, Soft, Yellow Hair @	...	...	...	16/- per dozen
---	-----	-----	-----	----------------

4    "    "    "    "    "    "    ...    ...    ...    ...    18/    "    "

Orders for one gross supplied in Cartons with customer's name and address free.  
Every Brush Guaranteed. British made by British Labour. Send for our present list of prices.



# HINDES "VERY" HAIR BRUSH

Quality	One X	Sold at 7/6d. each.	} TRADE PRICE 33½%
"	Two XX	" 10/6d. "	
"	Three XXX	" 15/- "	
"	Four XXXX	" 18/6d. "	

The three and four XXXX grade is made in Ebony or Rosewood  
chastely fashioned in both oval and circular bodies.

**HINDES "VERY" BRUSH FOR THE HAIR** is guaranteed pure bristles, the multiple tufts being set in a rubber air-cushion. They have been known to the trade for nearly 40 years.

**HINDES LTD., 1 TABERNACLE STREET, LONDON, E.C. :: Works: BIRMINGHAM**

# Beetham's

Sait Sarola  
Sarola Rose Bloom  
Glycerine & Cucumber

ALL PROTECTED AT FACE VALUE

**M. Beetham & Son.**  
**CHELTENHAM.**

# Tatcho-tone

For GREY HAIR

For GREY HAIR

**TATCHO-TONE CO., 5 Gt. Queen Street, London, W.C.**

**PRICES**  
8d. Trial phial  
per doz. 5/9  
Per doz  
2/6 size, 21/-  
4/6 „ 42/-

**TALCUM POWDER  
FACE POWDER  
VANISHING CREAM**

Any Grade.  
Any Colour.  
Any Perfume.  
Any Quantity.

All Merchandise in Bulk or in your own Containers.  
The C-PINE-O Manfg. Co. Ltd., Montague Rd., Hornsey, London, N, 8

# MEM DIAGONAL SAFETY RAZOR

**Embodying several important mechanical principles.**

A few Leading Patterns :

**D8 DIAGONAL** .. retail 6/6  
In Leatherette Box, 21 Blades.  
**D21 FOLDING** .. 8/6  
In Nickel Case, with 3 Blades.  
**D9 Ditto in Leather Case** 10/6  
**DIAGONAL BLADES**  
pkt. 10 3/9

<b>MEM DE LUXE,</b>	Gillette
Pattern .. ..	pkt. 10 3/6
<b>MEM EXTRA,</b>	Gillette
Pattern .. ..	pkt. 10 2/3
<b>MEM, Auto Strop</b>	Pattern
	pkt. 10 3/6

**33 $\frac{1}{3}$ % OFF ABOVE.**

*Special Quotations for Wholesale.*

**HAROLD J. SIMON**  
Import and Export Merchant.      Manufacturer of Fountain Pens.  
**11 LITTLE BRITAIN      -      -      LONDON, E.C.1.**

# LEICHNER'S

## GREASE PAINTS

and all

## THEATRICAL COSMETICS

INCLUDING THE WORLD FAMED

## FETTPOWDER

Sole Selling and Distributing Agents for  
LANCASHIRE, CHESHIRE, NORTH  
WALES and ISLE OF MAN:

**HEATHS, LTD.**

*Wholesale Chemists,*

**High Sreet, WAVERTREE, LIVERPOOL.**

To whom all orders and enquiries should  
be sent. Special terms sent on request.

# A PROFITABLE AUTUMN SIDELINE

**H**ERE'S a little line with big sales possibilities—FRU-JU'S! Better in every way than Sulphur Tablets, they are delicious to eat—an all-the-year-round remedy! Press Advertising now appearing will urge their use during the Autumn and a big demand is expected. Write for supplies to-day. Special window bills will link you up with our advertising and greatly help to stimulate sales.

## FRU-JU'S

The Delicious Medicinal Jubes

*Write for particulars and trade terms to:*

**F. W. HAMPSHIRE & CO., LTD.**  
Riverside Works, Derby.



# Lérys Advertising has begun

**F**ULL-PAGE announcements, now appearing in the leading illustrated magazines, feature Lérys Perfumes with a distinction that matches the quality of the goods. They will be read by your very best class of customer. Orders for Lérys stock can now be accepted for immediate delivery.

# LÉRY'S

Paris

## PARFUMS

Made by LÉRY'S, Paris.

Sole Concessionaire:

**H. A. CLARKE, 34-35 East Castle Street, W.1.**  
Telephone. Museum 5612.

# FOUR SPECIAL WINTER LINES

All Prepared for the Winter of 1925

H A N D B I L L S  
S T O C K L A B E L S  
8 o z . W R A P P E R S  
C A R T O N S

---

Our Samples of all the above  
have now been completed

MAY WE SEND  
YOU A SET?

---

THOMAS WAIDE & SONS LTD.

— The Chemists' Printers, —  
KIRKSTALL ROAD, LEEDS.

Telegraphic Address: "CRESSWELL, HOLB., LONDON."

Telephone: No. 1432 Holborn.

# THE SPONGE HOUSE

INTERNATIONAL SPONGE IMPORTERS, LIMITED,  
**CRESSWELL BROTHERS BRANCH**

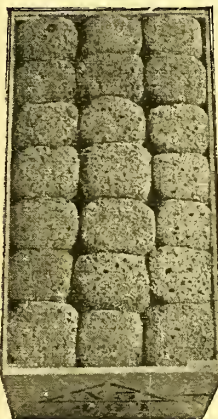
Sponge Importers, Exporters and Merchants, and Chamois Leather Dressers,  
**18 and 19 RED LION SQUARE** (New Warehouses and Steam Bleacheries, 45 EAGLE STREET) **LONDON, W.C.**

WITH THE LARGEST STOCKS OF ALL SPONGES IMPORTED DIRECT FROM THE FISHERIES AT LOWEST PRICES.



BUYERS ARE INVITED TO CALL AND INSPECT OUR LARGE AND VARIED STOCKS, AND THEY WILL CONVINCE THEMSELVES THAT THEY ARE DEALING IN THE "CHEAPEST MARKET"

## UNBLEACHED MEDITERRANEAN SPONGES in Original Cases



### HONEYCOMB.

Extra Choice. Finest Texture and Shape. The Pick of all the Fisheries.

Pieces in Case.	Average Price per Piece.
300 Toilet at	9d.
250 " "	1/-
200 " "	1/6
160 " "	2/-
140 " "	2/6
120 " "	3/-
100 " "	3/6
90 Medium Bath	4/6
80 " "	5/6
72 " "	6/6
60 " "	7/6
45 Large	8/6
30 " "	10/6

### HONEYCOMB.

Toilet & Bath.

Good 2nd Quality.

Pieces in Case.	Average Price per Piece.
270 at	6d.
180 " "	9d.
170 " "	1/-
160 " "	1/6
140 " "	2/-
120 " "	2/6
110 " "	3/-
90 " "	3/6
80 " "	4/-
75 " "	4/6
70 " "	5/-
65 " "	5/6
60 " "	6/6

### FINE TURKEY

#### SOLIDS.

SELECTED SHAPES.

1st Quality.

	Average Pieces Price in per Case. Piece
Nursery	200 at 1/-
Toilet	150 " 1/6
"	100 " 1/9
"	100 " 2/-
"	80 " 2/6
Bath	50 " 3/-
"	36 " 4/-
"	24 " 5/-



### LOOSE GOODS DEPARTMENT.

SPONGES IN SMALL PACKAGES. Fine Turkey. Fine Egyptian and Honeycomb. In 1st, 2nd and 3rd Qualities. Bleached or unbleached (state which in ordering). On strings of 1 dozen pieces, or loose in bags. At per doz.: 2s., 3s., 4s., 6s., 9s., 12s., 15s., 18s., 24s. 30s., 36s., 42s., 48s., 54s., 60s., 66s., 72s. Bleached Cuban. At per String or Dozen. Wool, Grass, Yellow and Fine. 1s., 2s., 3s., 4s., 6s., 9s., 12s., 15s., 18s., 24s.

**NEW VELVET HONEYCOMB.** Soft, Durable and large for money. Suitable for Toilet and Bath purposes.  
PRICES—Cut Shapes .. 3s., 4s., 6s., 9s., 12s., 15s., 18s., 21s., 24s., 28s., 30s., 33s., 36s.  
" Natural Shapes 4s., 6s., 9s., 12s., 15s., 18s., 21s., 24s., 30s., 33s., 36s.  
" Strongly recommended where an inexpensive Toilet and Bath Sponge is required.

# Petroleum Jelly

White, Yellow, Amber,  
& Ruby Red, for all  
Pharmaceutical and  
Veterinary purposes

**MEADE-KING, ROBINSON & CO., LTD.**

Liverpool - London - Manchester - Birmingham - Leeds

**PETROLEUM JELLY**  
(**'SALVO PETROLIA'**)  
BRAND

THE PERFECTION OF PETROLEUM JELLY  
MANUFACTURED SOLELY BY

**THE DEE OIL CO. LD.**

**D 23 & 24 EXCHANGE BUILDINGS  
LIVERPOOL**

TELEPHONE: **CENTRAL 3859**      TELEGRAMS: **'CESTRIAN'**

LONDON OFFICE  
**49 LIME ST. EC3      PHONE AVENUE 2885**

**PACKED IN BARRELS KEGS OR  
SMALLER PACKAGES IF DESIRED.**

OTHER GRADES OF  
PETROLEUM JELLIES WHITE BASES ETC.  
**WHITE OILS B.P. & Technical Qualities**  
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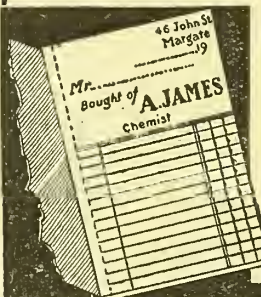
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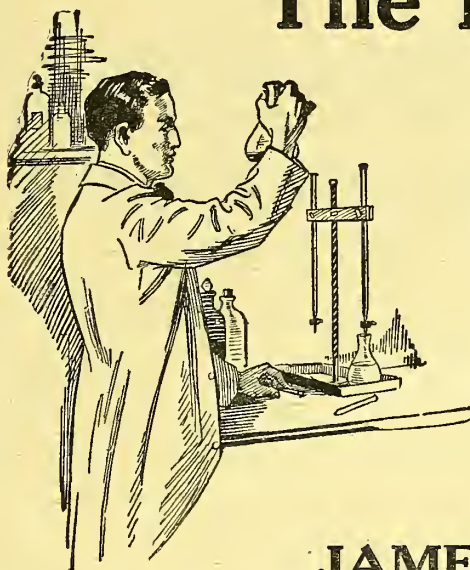
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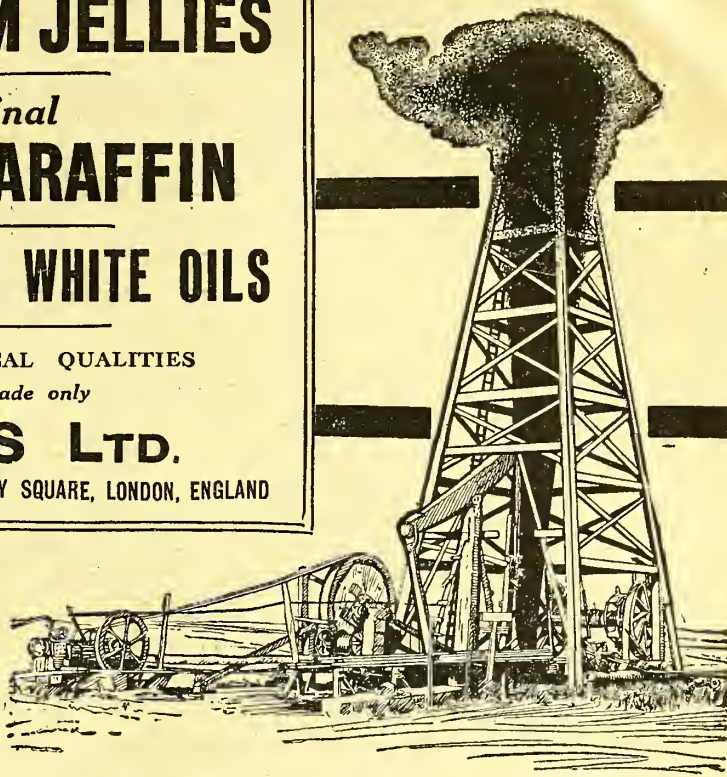
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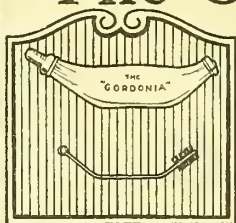
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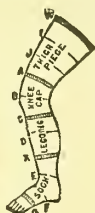
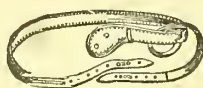
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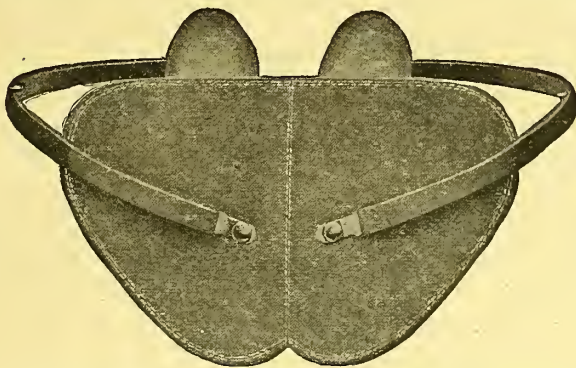
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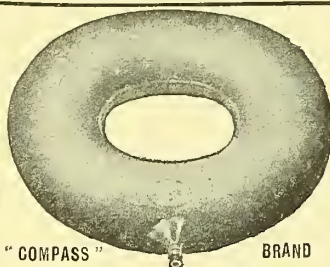
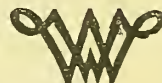


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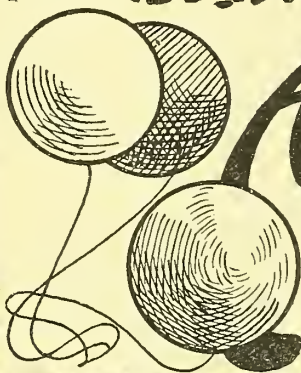
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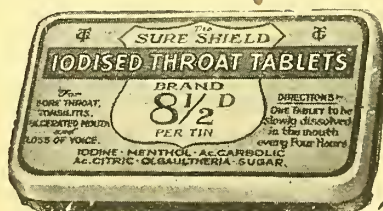
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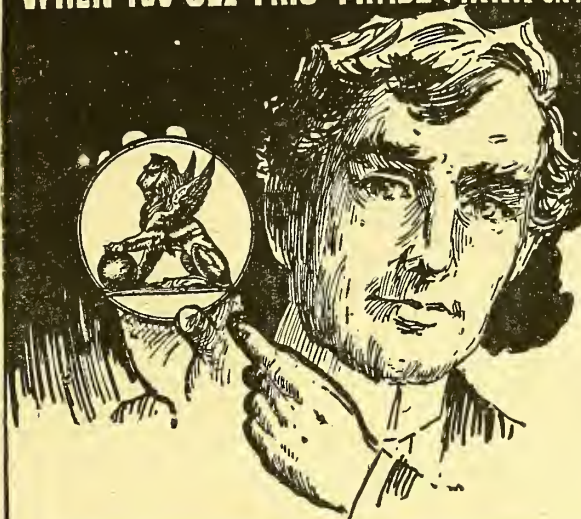
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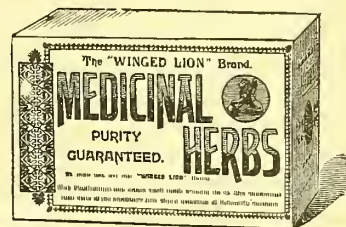
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**Eight factories in Dorset, Somerset and Wilts.**

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24/- per doz. large bottles - or 48/- per case of 25  
18/- „ „ small „ - or 72/- „ „ 50

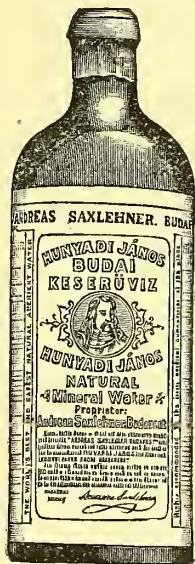
Net, Carriage Paid.

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Hunyadi János has for more than fifty years been recognised as the best of the **NATURAL** mineral waters containing sulphate of soda and sulphate of magnesia. Its laxative action is sure but gentle; it stimulates the liver and cleanses the blood.



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One Quality only—The Best.

Guaranteed for 2 years.

No.  
957



These bottles have stood the test of over thirty years' trade. Customers who have left us for cheaper goods have nearly always come back to the firm in whom they can place confidence. This is the time to place your stock order.

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	<div> <div>Sizes in inches</div> <div> <div>6×8</div> <div>6×10</div> <div>6×12</div> <div>8×10</div> <div>8×12</div> <div>8×14</div> <div>10×12</div> <div>10×14</div> </div> </div>															
"Empire" brand																
heavy make,																
grey rubber, each	3	33	5	3	8	3	10	4	4	4	9	5	0	5	9	
red	4	04	4	4	8	5	0	5	6	6	0	6	3	7	0	
	Each bottle in a strong paper bag with directions for use.															

"Each bottle in a strong paper bag with directions for use.

## COVERS

Sizes in inches		6×8		6×10		6×12		8×10		8×12		8×14		10×12		10×14	
Scarlet or Grey Plush,	each	1	21	4	1	6	1	7	1	8	1	10	2	0	2	3	
Velour, assorted																	
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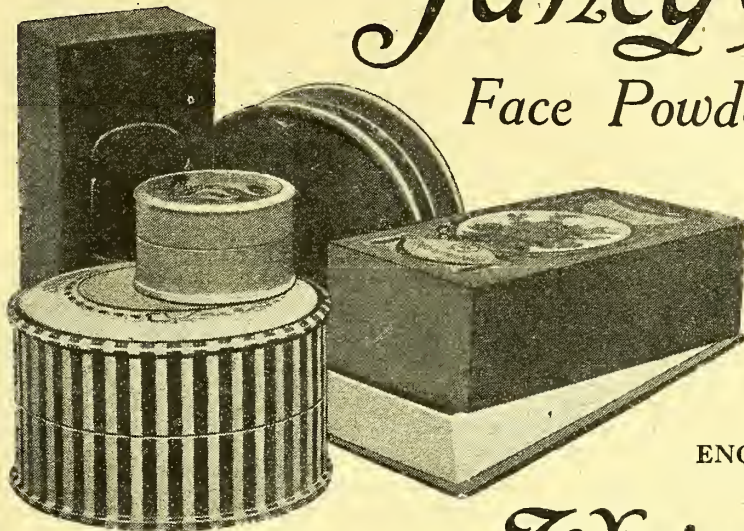
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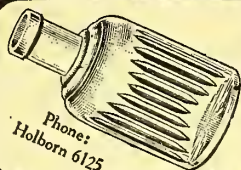
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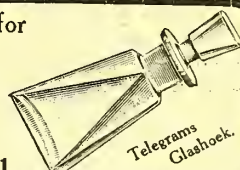
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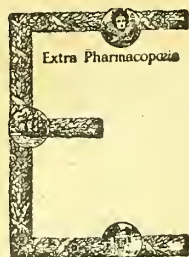
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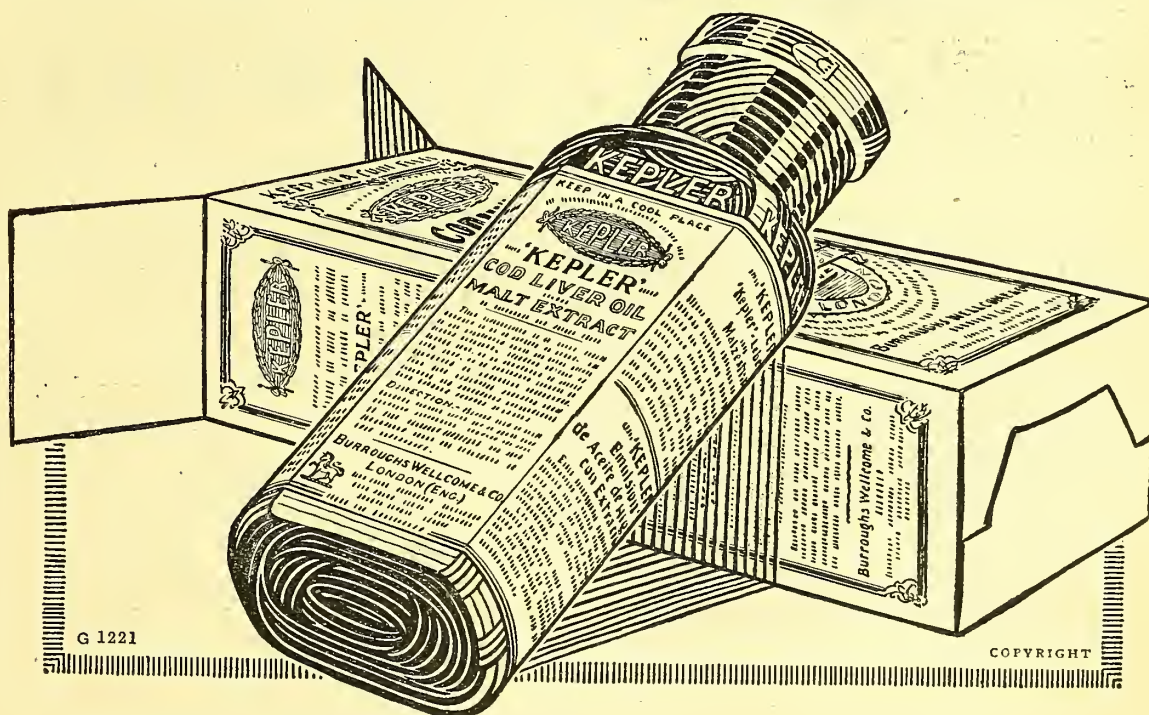


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### Contents

No. 13

Series 2383

Vol. 103

Adulteration of Saf-iron .....	445	PROGRESS OF PHAR- MACY:—	
Association Affairs ..	420	Analytical .....	425
Births .....	437	Chemistry .....	426
Business Changes ..	440	Biological .....	426
C. & D. Commer- cial Compendium ..	455	Botany .....	424
Colonial and Foreign News ..	419	Dentistry .....	430
Coming Events ..	437	Essential Oils ..	430
Company News ..	420	Fixed Oils and Fats .....	431
Correspondence:—		Industrial Chemistry .....	428
Letters .....	452	Materia Medica ..	431
Legal Queries ..	453	Medicine .....	432
Miscellaneous In- quiries .....	453	Miscellaneous ..	436
Deaths .....	438	Pharmaceutical Chemistry .....	422
Editorial articles:—		Pharmacology ..	434
Insurance Dispen- sary Position.— VI .....	442	Pharmacy .....	421
Cheapness of Sugar .....	444	Photography ..	435
English News .....	417	Pure Chemistry and Physics ..	429
Gazette .....	440	Veterinary Medi- cine .....	435
Insurance Act Dis- pensing .....	420	Recent Patents ..	440
Irish News .....	418	Retrospect .....	454
Marriages .....	437	Scottish News ..	419
Observations and Reflections .....	441	Sporting Events ..	437
Personalities .....	437	Trade Notes .....	440
		Trade Reports ..	446
		Wills .....	444

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## English and Welsh News

The Editor will be obliged if subscribers will send him marked copies of newspapers containing items of interest for insertion in this or other news sections.

### Contracts

The following tenders have been accepted by the bodies named:—

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### Grocers' Exhibition

The twenty-ninth international exhibition of the grocery trade at the Agricultural Hall, Islington, London, was opened on September 19, continuing until September 25. A very interesting display is provided with plenty of variety. Among the large number of exhibitors may be noted several whose names are well-known to the drug trade. These include the Be-Ze-Be Honey Co., Ltd., one of the world's large producers and packers of honey, who have a fine display of this article in various sized containers. An attractive line is rusks, in which cane sugar is replaced by honey. We understand that borax and honey, in 1½ oz. bottles, will shortly be introduced to the drug trade. Newball and Mason's stand is complete with all the well-known products of the company, including wine essences and cordials, citrates, salines and health salts. Iodised salt, which has recently been suggested in certain diseases, is also on show. The Harpic Manufacturing Co., Ltd., have a striking display of the "Pic" series of household requisites, and a miniature cinematograph gives graphic proof of the deadly effect of Fly-pic on insect pests. A gift display board for the various preparations is available in return for orders of a certain quantity. P. H. Galloway, Ltd., have a comprehensive display of packed goods for the grocery trade, which are guaranteed under the Sale of Food and Drugs Acts. These include camphorated oil, seidlitz powders, 3 per cent. lysol, castor oil, etc. The latest models of cash registers and tills are shown by the National Cash Register Co., Ltd., and G. H. Gledhill, Ltd. Price's Patent Candle Co., Ltd., have handsome display of candles which include night lights, trylite candles, and others of highly decorative design. Tasting samples of the increasingly popular glax-ovo are provided at the Glaxo stand, where there is also some telling advertising material. Fairy Dyes, Ltd., have an attractive setting, and Drummer Dyes and Jiffy are pleasingly displayed at the stands of William Edge & Sons, Ltd. The Pure Lemon Juice Co., Ltd., offer a pure juice which is well recommended by certain medical authorities. The Grocers' Proprietary Articles Association is now in existence and a plentiful supply of literature is provided at the stand where the scheme is fully explained.

### Birmingham

Remedies for chilblains are already being quoted in the local Press.

Chickenpox and mumps are prevalent in the Birmingham elementary schools.

The success of the Midland Salon of Photography at the Municipal Art Gallery has assisted the sales of films and cameras.

Mr. J. F. Liversidge, F.I.C., Ph.C., city analyst, gave an address on "Government Research on the Action of Alcohol" before the Band of Hope Conference at Old Hill, on September 19.

The death is announced of Mr. W. J. Lancaster (J. Lancaster & Sons, Ltd.) at the age of seventy-nine. Mr. Lancaster, who was one of the first to popularise sets of photographic apparatus, was formerly a city councillor and held many offices in Birmingham in his early days.

At Birmingham County Court, on September 18, a claim was made on behalf of a boy, aged seven, against Mr. J. Linell (Linells, Ltd., chemists, Balsall Heath), by whose motor the boy had been knocked down. Defendant had paid £75 into court, with a denial of liability, and an order was made for the acceptance of this sum in settlement of the claim, with costs.

### Liverpool

The weather is decidedly autumnal, and there is a good demand for the usual seasonal remedies.

Mr. F. Hamby, chemist and druggist, has taken over the business of Mr. I. Alexander, chemist and druggist, 65 West Derby Road.

A burglary took place at the premises of Alfred Jones, Ltd., on September 15. Nothing of importance was stolen, but the office was considerably disorganised.

Alderman Robert Herman, J.P., of R. & J. Herman, chemists, Water Street, and Aintree, has received congratulations from his many friends on his complete recovery from a serious illness.

The annual dance and supper of the Liverpool Chemists' Association, one of the most popular social events the Association promotes, will be held at the Adelphi Hotel on October 7.

Arrangements to hold a civic week, commencing on October 5, have now been completed. The Lord Mayor is taking an active interest in the scheme, which is to help the trade of the port and bring more visitors.

The Liverpool Pharmacy Club will commence its winter session with a social on September 30. Copies of a full and varied programme, including dances, whist drive, theatre party, and rambles, have been sent to members, who now number about 140.

Members of the committee of the local branch of the Pharmaceutical Society were entertained, on September 18, to an evening of music given by the British Music Society (Liverpool centre) in the Rushworth Rooms. After an examination of an interesting collection of old musical instruments dating from the early part of the eighteenth century, tea was served, and followed by an excellent programme of music, rendered by the Misses A. Caley, C. Le Mesurier and V. Hall, whose charming folksongs and instrumental items gave the finishing touch to a delightful evening.

### Miscellaneous

**POISON-LICENCE APPLICATION.**—Mr. F. J. A. Fogwill, Guildford, has applied to the town council for a licence to sell agricultural and horticultural poisons.

**SHOPPING FESTIVAL.**—To follow up the Bradford shopping week (September 26 to October 3) an advertising fancy dress ball is to be held on October 7. Among the manufacturers giving prizes for fancy costumes are The British Drug Houses, Ltd.; Virol, Ltd.; and Oatine Co.

**POISONINGS.**—At Manchester, recently, a verdict of "Accidental death" was returned at an inquest on the body of Mary A. Jones, Chorlton-cum-Hardy, who died from veronal poisoning. Other cases of fatal poisoning recorded since our last report include suicides in London by spirit of salt (Hampstead), carbolic acid (Bethnal Green), disinfectant (Deptford).

**IN THE COURTS.**—At Rotherham Police Court, on September 16, James Green, labourer, was committed for trial on a charge of breaking into and stealing goods to the value of 7s. from the premises of Mr. F. A. Westbrook, chemist and druggist, Doncaster Road.—At Doncaster Police Court, on September 19, Arthur J. Whin-

mouth was sentenced to three months' imprisonment on charges which included one of obtaining £1 by false pretences from Mr. A. Ardagh, chemist and druggist.

**LEAGUE OF EX-SERVICE PHARMACISTS.**—Captain H. A. Hill, secretary of the League of ex-Service Pharmacists, writes: "Branches or local groups of the League are reminded that it is desirable that interviews with local members of Parliament should be sought as early as possible. The object of these interviews is to impress upon members the urgent necessity for the adoption by the War Office of the Joint Committee's report, copies of which are being sent out to branch or group organisers. It should be impressed upon members of Parliament that the adoption of this report would result in a saving to the Treasury and not an increase in expenditure."

**SALE OF SULPHURIC ACID.**—At a meeting of the High Wycombe Town Council, on September 15, the sanitary inspector reported that on August 12 he purchased sulphuric acid which was sold in contravention of the Poisons and Pharmacy Act, 1908, inasmuch as it was supplied in plain bottles. In one case the acid was supplied in a medicine bottle and in two other cases in whisky bottles. The Council decided that the vendors of the acid should be cautioned and informed that in future contraventions of the Act would be followed by a prosecution. It was also decided that the provisions of the Act relating to the sale of poisons should be advertised in the local Press.

## Irish News

### Meeting of Creditors

A meeting of the creditors of Mr. James McClelland, chemist, Main Street, Randalstown, was held recently at 22 William Street, Belfast, when an offer was made of 3s. 4d. in the pound in three instalments, spread over nine months. No definite resolution was passed at the meeting. Amongst the creditors are: Ayrton, Saunders & Co., Ltd., £22; The British Drug Houses, Ltd., £18 15s.; Bourjois et Cie, Ltd., £10; Burt, Boulton & Haywood, Ltd., £5 15s.; Chemists' Sundries, Ltd., £24 15s.; J. H. Gledhill, £14 15s.; Houghtons, Ltd., £47 18s.; J. & J. Haslett, £46 5s.; Johnson Bros., £17 5s.; Kodak, Ltd., £15 5s.; Thos. McMullan & Co., £35 15s.; National Cash Register Co., Ltd., £27; Fred Storey, Ltd., £15; Southall Bros. & Barclay, Ltd., £13 5s.; and Thomas Waide & Son, £10 10s.

### Brevities

The salary of the compounder of Peter Street Dispensary, Waterford, has been increased from £80 a year to £120.

At a recent competition for five musical scholarships, value 30 guineas each, at Belfast, Miss Mollie Anderson, Medical Hall, Fivemiletown, gained first place in piano-forte playing.

Mr. Jas. E. O'Neill, J.P., Maghera, co. Derry, vice-chairman of the Londonderry County Council, has been appointed a member of the Compensation Tribunal established under the Northern Ireland Licensing Act.

An outbreak of fire occurred on September 18 in the pharmacy of Mr. W. J. Jones, Ph.C., The Quay, Waterford, while Miss Walsh, an assistant, was at the rear of the premises drying photographs. The outbreak was extinguished before much damage was done, but Miss Walsh received slight burns on the hands, and after first-aid, was conveyed to the City Infirmary.

### Dublin

During the hearing of a charge of the larceny of bicycles and camera, etc., recently, in Dublin, against Frances Heven, Wm. Currie, assistant in the chemist's shop of Mr. F. E. Preston, Ph.C., Rathmines Road, Dublin, said the prisoner asked for a draught of ammoniated quinine, and after she had left the shop a camera was missed from the window, and this was subsequently found in Heven's possession. The prisoner was remanded.

## Scottish News

### Brevities

Owing to weather conditions, the heather honey harvest has been comparatively poor.

At Paisley Police Court, on September 21, Thomas Smith, described as a commercial traveller, pleaded "Guilty" to four charges of defrauding local shopkeepers and was sentenced to twenty-one days' imprisonment. It was stated that by pretending to be the representative of a drug manufacturing company now issuing twopenny tubes of headache tablets, instead of the former threepenny powders, he had sold cards of the tubes. Later it was discovered that the tubes were either empty or contained a few grains of sugar.

### Fife

Mr. D. R. Dow, M.D., Crail, has been appointed to the Chair of Anatomy in University College, Dundee, in succession to Principal Mackay, retired.

An application for a licence under Section 2 of the Poisons and Pharmacy Act, 1908, has been made to the County Council by W. P. Lunn, grocer, Upper Largo.

Dr. E. G. Bryant, B.Sc., Ph.C., Robert Gordon's College, Aberdeen, was the preacher at the morning service at Whyte's Causeway Baptist Church, Kirkcaldy.

## Colonial and Foreign News

**NEWFOUNDLAND COD-LIVER OIL.**—During 1923-24 the exports of cod-liver oil from Newfoundland amounted to 41,839 gallons, compared with 50,962 gallons in 1922-23.

**BULGARIAN POPPY SEEDS.**—Since the war the cultivation in Bulgaria of the poppy for its seeds has made considerable strides, and in 1924 the total yield of poppy seeds amounted to 95,700 kilos.

**NORWEGIAN PENSION FUND FOR PHARMACISTS.**—The Storting has voted a grant of 6,000 kroner from the pharmacy tax fund to a committee appointed to investigate ways and means of establishing a pension fund for Norwegian pharmacists.

**LUXURIES FOR BULGARIA.**—The existing regulations prohibiting the importation into Bulgaria of articles classed as luxuries (*C. & D.*, March 8, 1924, p. 328) will be repealed on October 15. In addition to paying the rates of duty fixed by the customs tariff, a surtax will be levied on all goods of this class.

**DUTCH SECRET REMEDIES LIST.**—Following an order of the Dutch Minister of Finance, Bronchial Lozenges (*P. D. & Co.*) and Laekerol Pastilles (*C. & D.*, June 13, p. 843) have been removed from the list of secret remedies chargeable at the rate of 50 per cent. *ad val.*; henceforth the ordinary rate of duty of 8 per cent. will be levied on both preparations.

**THERMOMETERS FOR RUSSIA.**—The Council for Labour and National Defence of the U.S.S.R. has decreed that only thermometers graduated in the centigrade scale may henceforth be manufactured in Russia or imported from abroad. This applies also to all apparatus of which a thermometer forms an integral part. Further, this decree stipulates that all thermometers graduated according to other scales at present in general use, as well as those employed in science, medicine, commerce, and industry, must be replaced by instruments graduated in centigrade before January 1, 1927.

**TURKISH MEDICAL CONGRESS.**—The first Turkish Medical Congress was held in Angora on September 1 to 3, and was presided over by Ghazi Mustapha Kemal Pasha. Invitations to attend had been sent out to all Turkish medical practitioners, and the Government had provided special facilities for travel to the capital, and also for the accommodation of the participants. Discussion of the means of combating malaria formed an important part of the programme. In connection with the congress, an exhibition of pharmaceutical specialities manufactured by Turkish pharmacists had been arranged.

**CONGRESS OF PHARMACY ASSISTANTS.**—The first congress of the International Union of Pharmacy Assistants will be held in Vienna, on October 10 and 11. Invitations to attend have been issued to the various associations of assistants in the chief European countries, and also to the All-Russian Association of Sanitary Workers, which includes the pharmacists in the U.S.S.R. The object of the congress is to secure an improvement of the economic position of pharmaceutical employees by a closer co-operation between all the associations of assistants, as a step towards the realisation of an international pharmaceutical trade union.

**SPANISH SACCHARIN MANUFACTURE.**—No saccharin is manufactured in Spain, and since 1903 its importation is prohibited, except for medicinal uses; pharmacists, who alone are allowed to import it, are not permitted to keep more than 4 kilos in stock. Señor Juan B. Morató y Font, a pharmacist of Barcelona, recently applied to the Military Directorate for the exclusive permission to manufacture and sell saccharin. By a Royal Order, Señor Morató is granted permission to manufacture this substance, but not as a monopoly, "since this would exclude national as well as foreign competition and result in raising the price of this product."

**SAMPLES OF PROPRIETARY PREPARATIONS.**—The Franco-Belgian *modus vivendi* contains an article establishing the conditions under which samples of pharmaceutical specialities are to be admitted free of duty into either country:—(1) One sample only may be sent by post addressed to the actual recipient, who must be a medical practitioner, veterinary surgeon, or pharmacist. (2) It must bear a label indicating that it is a sample only, not intended for sale. (3) The amount of the sample may not exceed one-half of that contained in the boxes, bottles, or other containers in which the preparation is usually sold. (4) The intrinsic value of the sample may not exceed 3 francs.

**NARCOTICS FOR SWITZERLAND.**—The Swiss Federal Health Department has issued a list of preparations to which the provisions of the law on narcotics (*C. & D.*, August 8, p. 205) are applicable. In addition to official preparations, a large number of proprietary products are included, among which figure: All preparations of Allen & Hanburys, Ltd., Burroughs Wellcome & Co., and Parke, Davis & Co., in whatsoever pharmaceutical form, also all ampoules irrespective of origin and form (tubunic, etc.), containing opium, morphine, heroin or cocaine, unless they are associated with substances excluding the possibility of any illegitimate use; Burnett's cocaine; Christy cocaine lozenges; Smith's glyco-heroin.

**TURKISH OPIUM.**—Recently a commission appointed by the Commissariat for Agriculture has been inspecting the extensive poppy fields in the vicinity of Afium Kara Hissar, with the object of studying the position of opium production in Turkey. The commission also arranged meetings with the opium dealers, in the course of which Faik Bey, director general of the opium trade, urged the necessity of promoting the export of opium on a national basis, by the establishment of direct relations with opium buyers in foreign markets. The Commissariat for Trade is investigating this proposal and has promised its active support. In the meantime it was decided to form an association of opium dealers, which has received official recognition.

**OIL OF NIAOULI.**—Increasing use is being made in France for medicinal purposes of the essential oil of *Melaleuca viridiflora*, extensively sold under the name of "gomenol." New Caledonia is the chief source of supply, the exports from that colony amounting to:—

1916 ... ..	14,499 kilos.	1921 ... ..	7,929 kilos.
1917 ... ..	5,517 "	1922 ... ..	1,738 "
1918 ... ..	4,376 "	1923 ... ..	2,529 "
1919 ... ..	2,258 "	1924 ... ..	5,739 "
1920 ... ..	5,343 "		

In 1924 the Commission fixed the value of the oil at 15 francs per kilo, against 8 francs in 1923; in March 1925 the price for delivery had advanced to 26 francs. The collection of the leaves for distilling the oil is handicapped by the shortage of labour.

## New Companies and Company News

**P.C.** means Private Company and **R.O.** Registered Office.

**KELVIN PRODUCTS, LTD. (P.C.).**—Capital £1,000. Objects: To carry on the business of wholesale and retail chemists and apothecaries, etc. **R.O.:** 2 South Portland Street, Glasgow.

**LEEDS CITY CHEMICALS, LTD. (P.C.).** Capital £2,000. Objects: To carry on the business of chemists, druggists, drysalts, oil and colourmen, soap manufacturers, etc. The directors are: H. Rennard, G. H. Eckles, and E. H. Wigglesworth. Solicitor: W. Morgan, Cogan Chambers, Bowlalley Lane, Hull.

**PEARSON PHARMACY, LTD. (P.C.).**—Capital £1,000. Objects: To acquire the chemists' business at 140 Kingsland Road, London, E.2, and to carry on the business of chemists, druggists, opticians, drug store proprietors, patent medicine proprietors and vendors, wine and spirit merchants, stationers, dealers in fancy goods, wireless and photographic materials, etc. The directors are: H. B. Thompson, Jane Cross and E. Jones. **R.O.:** 140 Kingsland Road, London, E.2.

**UNITED ALKALI CO., LTD.**, has declared an interim dividend of 4 per cent., less tax, on the ordinary shares for the year ending December 31, 1925.

**PARKES CHEMISTS, LTD.**, announce the payment on September 21 of the dividend on preference shares for the half-year ended August 31, at the rate of 6 per cent. per annum, less income tax.

**SOCIÉTÉ ANONYME COMMERCIALE ET INDUSTRIELLE DE PRODUITS RESINEUX** (Ancienne Maison P. Athanassoula) is the new style and title adopted by P. Athanassoula, 35 Rue Philonos, Piræus, dealers in Greek resin and its products.

**BURT, BOULTON & HAYWOOD, LTD.**—The gross income for the year ending June 30, 1925, was £148,026, against £154,528, and the net profit £61,012, compared with £72,928. The allocation to reserve is halved at £15,000, while the dividend is 10 per cent., less tax, against 8 per cent., tax free, and the carry forward is reduced from £17,241 to £14,420.

## Association Affairs

**Edinburgh.**—In the prize schemes competitions of the Edinburgh Chemists', Assistants' and Apprentices' Association the following are the successful candidates:—Ewing Pharmacy Prize, presented by Dr. J. Laidlaw Ewing, value £1 1s., open to apprentice members, for excellence in pharmacy, prescription reading and posology, Mr. J. I. Aitken (pupil of J. H. Tainsh, 37 Ashley Terrace); second prize, value 10s. 6d., presented by Mr. Arthur Cairns, Miss C. G. S. Wright (pupil of Mr. J. G. Selater, 96 Easter Road). Cumming Prize, presented by Dr. John Cumming, value £1 1s., open to all apprentice and undergraduate members of the Association, for excellence in practical pharmacy and dispensing and reading of autograph prescriptions, Miss M. Coyne (pupil of Mr. Peter Boa, Ph.C., 64 Morningside Drive); second prize, value 10s. 6d., presented by the President, Mr. Eric Knott, Ph.C., Miss Alice McEwan (pupil of Mr. George Cowie, 37 Dublin Street).

**West Ham.**—The West Ham Association of Pharmacists met on September 17, the President (Mr. F. W. Gwinn) in the chair. A few impressions on the Glasgow Conference were dealt with by Mr. W. J. Beardsley, member of the Pharmaceutical Council, who said that all Associations should be represented at these conferences. The speaker felt it was a pity that the science papers did not deal more fully with the requirements and difficulties of every-day pharmacy, and suggested that they would be far more popular if some attempt were made to interest the practising pharmacist to some degree in methods for assaying and testing his own preparations. He also suggested as a suitable subject for a paper the keeping properties of concentrated infusions, liquid extracts, etc.

## Insurance Act Dispensing

Record of matters concerning Chemists' interests in the National Health Insurance Acts.

### ENGLAND AND WALES

#### Local Reports

**London.**—A meeting of the Pharmaceutical Committee took place on September 22, Mr. J. A. Thompson (chairman) presiding. The report of the Central Checking Bureau for May and June 1925 showed a margin of error of 0.05 per cent. and 0.06 per cent. respectively. As the Committee were not satisfied with certain items, the secretary was instructed to inquire into the matter. The question of the dispensing facilities for prescriptions marked "urgent" outside chemists' regular business hours was referred to the Standing Subcommittee. It was reported that the steps taken by the Committee to secure a high standard of accuracy in dispensing have proved satisfactory. The secretary reported, *inter alia*: (a) Particulars of a complaint regarding the delay in supply of medicine in the Western area. (b) The result of investigations regarding the adequacy of the service in the South-East London district. (c) Details of irregularities in the dispensing service. (d) Statistics for the first six months of 1925, as follows:—

Number of prescriptions .. .. .	3,809.681
Value of ingredients .. .. .	£57,201 16s. 3d.
Value of dispensing fees .. .. .	£71,565 19s. 1d.
Average value of ingredients .. .. .	3.60d.
Average value of dispensing fees .. .. .	4.51d.

Since the last meeting there have been a considerable number of changes in the panel list. Nine new shops have been opened, together with four new branch establishments, and four businesses have changed hands. The attention of the Committee has been drawn to the question of the prescribing of sherry wine on Insurance prescriptions. The Committee decided that this is irregular, and that chemists have no authority to dispense sherry wine *per se* for insured persons.

**Middlesex.**—At a meeting of the Pharmaceutical Committee, held on September 16, Mr. C. W. Andrew in the chair, the following report was presented by the supervisor:—

	May	June	July
Number of prescript. .. .. .	119,955	106,220	108,024
Total value .. .. .	£4,298 11s. 3d.	£3,762 11s. 4d.	£3,861 7s. 10d.
Average cost .. .. .	8.60d.	8.50d.	8.57d.
Average ingred. cost .. .. .	4.12d.	4.06d.	4.13d.
Average dispens. fee .. .. .	4.48d.	4.44d.	4.44d.

Prescriptions for the seven months totalled £63,221, as against 918,036 for the corresponding period of 1924. Insulin prescriptions were as follows:—Second quarter, 369 for 41 patients, total value £117 1s. 9d. Serums and vaccines prescriptions:—Second quarter, 89 for 73 patients, total value £35 15s. 11d. Ministry of Pensions prescriptions in the London region:—March, 5,422, total value £222 2s.; April, 5,636, total value £230 19s. 4d.; May, 4,120, total value £168 1s. 7d. Chemists are again advised that they help themselves when they assist the Pricing Office by giving all information required for the pricing of prescriptions. One chemist has recently dispensed a prescription for a proprietary preparation and marked the script "phone, post," but he gives no particulars as to the amount of charges, and thus makes it difficult to allow his necessary expenses. The length and breadth of plasters dispensed should always be indicated.

The secretary reported that some chemists were alleged to be in doubt respecting the correct procedure when dangerous drugs were dispensed for insured persons. It was therefore decided to remind chemists on the Middlesex panel that it is always necessary to record the dispensing of drugs covered by the terms of the Dangerous Drugs Acts and Regulations, whether ordered in Insurance prescriptions or others.

**Shropshire.**—At a recent meeting of the Insurance Committee a point was raised as to whether the Committee was liable to pay for the cost of dispensing a prescription issued by an insurance practitioner in the county, but made up for the insured person in an outside area. As no travellers' vouchers had been issued, the Committee was under no obligation to pay, but as the sum involved was small, the Committee agreed to pay the chemists.

# The Progress of Pharmacy

## AND ALLIED SCIENCES

### PHARMACY

**Mucilage of Gum Acacia.**—Mucilage of gum acacia of the tenth edition of the Swedish Pharmacopœia is prepared by dissolving 333 grams of gum acacia in 666 grams of water, adding 1 gram of benzoic acid.

**Boëck's Liniment.**—This liniment, included in the Swedish Pharmacopœia 1925, is to be prepared when required by mixing together 8 grams of glycerin, 18 grams of wheat starch, 18 grams of talc and 56 grams of diluted solution of lead subacetate.

**Syrup of Bromoform.**—Formula of the Supplement (1925) to the French Codex:—

Bromoform .. .. .	5 grams
Alcohol (90 per cent.) .. .. .	45 grams
Glycerin .. .. .	150 grams
Syrup .. .. .	800 grams

**Methyl Rosaniline Ointment.**—The tenth edition of the Swedish Pharmacopœia gives the following formula:—

Methyl rosaniline .. .. .	2 grams
Copper sulphate .. .. .	10 grams
Hydrous wool fat .. .. .	44 grams
Lard .. .. .	44 grams

**Purified Honey.**—The tenth edition of the Swedish Pharmacopœia requires that 1,000 grams of honey be mixed with 1,500 grams of water and 100 grams of kaolin and the mixture heated to 90°, with constant stirring. It is then strained and the clear liquid evaporated to produce about 1,040 grams, with a specific gravity of 1.32-1.34.

**Swelling of Agar.**—E. H. Harvey ("American Journal of Pharmacy" July, 1925, p. 447) gives a table and curve showing that agar on soaking in water imbibes water rapidly at first (8½ times its weight in 5 minutes), but absorption slows later (17 times in 30 minutes and 18.74 in 60 minutes). The lowering of the viscosity of 1 per cent. agar sols shows that boiling hydrolyses the agar and destroys its ability to gel.

**Face Cream.**—A non-greasy face cream exhibiting a lustrous appearance can be prepared ("Deutsche Parfümerie-Zeitung," p. 170, 1925) by melting together 200 grams of stearic acid and 40 grams of oleic acid, and adding to the molten mass a hot solution of 10 grams of potassium hydroxide in 800 grams of water. The mixture is well mixed until it assumes a creamy consistency. It may be perfumed as desired.

**Compound Suppositories of Adrenalin.**—The Portuguese Formulário Oficial e Magistral contains the following formula for these suppositories, for use in the treatment of hæmorrhoids:—

Solution of adrenalin (1:1,000) .. .. .	50 drops
Stovain .. .. .	0.5 gram
Extract of hamamelis .. .. .	1 gram
Oil of theobroma .. .. .	28 grams

To make 10 suppositories.

**Horse Fat for Pharmaceutical Preparations.**—Veyrières ("Bulletin Médical," May 16, 1925) found that in horses practically all the fat that can be extracted lies in the omentum region. Part of it is very soft. From his experiments he concludes that it is a suitable substitute for vegetable oils in pharmaceutical preparations; it is less expensive and it penetrates the skin far better. Combin-

ing it with other fats in proportions to be determined, excipients of desired consistency may be made. Experiments show that it saponifies easily.

**Compound Syrup of Bromoform.**—Formula of the Supplement (1925) to the French Codex:—

Official solution of bromoform .. .. .	10 grams
Codeine .. .. .	0.5 gram
Alcohol (90 per cent.) .. .. .	35 grams
Tincture of aconite root .. .. .	5 grams
Cherry-laurel water .. .. .	50 grams
Syrup of balsam of tolu .. .. .	300 grams
Compound syrup of ipecacuanha .. .. .	600 grams

**Wool Fat Ointment.**—With the synonym "Lanolin Cream" the following preparation is included in the tenth edition of the Swedish Pharmacopœia:—

Wool fat .. .. .	480 grams
Liquid paraffin .. .. .	250 grams
White wax .. .. .	45 grams
Borax .. .. .	8 grams
Oil of bergamot .. .. .	0.8 gram
Oil of orange flower .. .. .	0.8 gram
Oil of rose .. .. .	0.8 gram
Distilled water, to produce .. .. .	1,000 grams

**Lettish Male Fern Extract.**—For nearly a century the male fern extract prepared in Wolmar has enjoyed a high reputation on account of its stability and activity, large amounts being exported, principally to Russia. An investigation undertaken by J. Maizits ("Latvijas Farmaceitu Zurnals," June 25, 1925) proved that the extract is not prepared from the official drug, but from the fresh roots and leaf bases of *Dryopteris eu-spinulosa*, Aschers., which is usually regarded as an adulterant; however, for the preparation of the extract, which contains often over 40 per cent. of filicin, the use of this variety as the raw material is preferred to that of *Dryopteris filix mas*.

**Standardisation of Sieves.**—P. E. Masters ("State Technology," June) suggests that a standard relation ( $D=2.7d$ ) should exist between diameter ( $d$ ) of wire and distance ( $D$ ) between the centre lines of consecutive wires forming the mesh. This method would avoid the serious variation in sifted material, such as an 80-mesh sieve made by one maker with 38-gauge wire, and another with 42-gauge. The correct wires on the above system would be:—

Mesh .. .. .	10	20	30	40	60	80
Wire gauge .. .. .	19	25	29	33	37	40

Mesh .. .. .	100	120	140	160	200
Wire gauge .. .. .	42	44	45	46	47

**Cod-Liver Oil Extracts.**—A. K. Epstein and B. R. Harris ("Journal of the American Pharmaceutical Association," July, p. 589) have examined cod-liver oil extracts called Gaduol (alcoholic extract sp. gr. 0.920) and Jecorrol (ether extract sp. gr. 0.840), claimed equivalent to some twenty times their own weight of cod-liver oil. The extracts are viscous, almost black liquids with a fishy odour. Half the extract consists of oil and free fatty acids. The unsaponifiable matter is high (29.9 and 42.5 per cent. for alcohol and ether extracts respectively), so that their vitamin activity may be considerable, but this was not tested. It is considered that the extracts are made from brown oil in the case of ether extract from residual cod livers after pressing out the oil.

## The Progress of Pharmacy and Allied Sciences

**Cosmetic Ointment.**—An "Ointment for the Hands," with the official title "Unguentum Cosmeticum," is included in the tenth edition of the Swedish Pharmacopœia, prepared as follows:—

Stearic acid .. .. .	200 grams
Glycerin .. .. .	100 grams
Solution of sodium hydroxide (17 per cent.)	70 grams
Alcohol (90 per cent.) .. .. .	50 grams
Oil of bergamot .. .. .	0.5 gram
Oil of rose .. .. .	1 gram
Distilled water, to produce .. .. .	1,000 grams

Mix the glycerin and solution of sodium hydroxide with 450 grams of water, and heat the mixture to boiling. Melt the stearic acid and add it in a thin stream to the mixture, on a water bath, with constant agitation, until the sodium hydroxide is neutralised. On cooling, add the alcohol, the essential oils and finally the remainder of the water.

**Neisser-Siebert's Ointment.**—This ointment is official in the new Swedish Pharmacopœia under the title "Unguentum Desinficiens," for which the following formula is given:—

Mercuric chloride .. .. .	3 grams
White gelatin .. .. .	7 grams
Sodium chloride .. .. .	10 grams
Tragacanth .. .. .	20 grams
Wheat starch .. .. .	40 grams
Glycerin .. .. .	170 grams
Alcohol (90 per cent.) .. .. .	250 grams
Distilled water, to produce .. .. .	1,000 grams

Rub the tragacanth and starch with the glycerin, dissolve the gelatin in 500 grams of warm water; add the mercuric chloride and the sodium chloride, and while the solution is still warm, add the mixture of tragacanth, starch and glycerin. Heat the mixture on a water bath until a paste is produced, replacing the water lost in evaporation; on cooling, add the alcohol in small portions.

**Accuracy of Hypodermic Tablets.**—The U.S. Bureau of Chemistry has announced in the "American Journal of Pharmacy," August, p. 556, its intentions regarding "adulteration or misbranding" of hypodermic tablets. The collected data show that though most of the hypodermic tablets on the market comply reasonably with the compositions declared, a material number were found to vary from the stated composition by amounts in excess of what should be expected under properly controlled conditions of manufacture. The maximum variations suggested by committees representing the manufacturing drug trade are: Hypodermic tablets containing  $\frac{1}{4}$  grain or more of atropine sulphate, or strychnine sulphate, or strychnine nitrate, 7.5 per cent.; ditto, containing less than  $\frac{1}{4}$  grain of alkaloid, 9 per cent.; cocaine hydrochloride tablets or codeine tablets, 9 per cent.; and morphine tablets, 6.75 per cent. The method of analyses recommended include taking sufficient tablets to represent at least one grain of alkaloid, dissolving in distilled water and shaking out with specified solvent after rendering alkaline with ammonia. Chloroform is to be used for extraction for atropine, codeine and strychnine; ether for cocaine; and chloroform-alcohol (3 to 1) in the case of morphine. After removal of solvent from combined extracts the residue is dissolved in a few c.c. of neutral alcohol and 10 c.c. twentieth normal sulphuric acid added, and excess back-titrated with fiftieth normal potassium hydroxide solution with methyl red as indicator (but indicator is not specified for morphine).

**Automatic Extraction of Alkaloids with Immiscible Solvents.**—Automatic devices have been found very useful for extracting fluid extracts of belladonna, ipecacuanha, and nux vomica in the Drug Control Laboratory at Washington, D.C., state S. Palkin, A. G. Murray, and H. R. Watkins in "Industrial and Engineering Chemistry" for June (p. 612). In order to obtain a clean alkaloidal residue by one extraction 25 c.c. of fluid extract (or tincture 100 c.c.) is de-alcoholised and partially purified by adding 3 c.c. normal sulphuric acid and evaporation on steam bath to about 10 c.c., diluting this concentrate to 50 c.c. and filtering. Fig. 1 shows at B the "simple" type

apparatus as arranged used with light solvents. The small holes at end of funnel tube (b) are made by fixing a nichrome spider between melted ends of two tubes and drawing off one of these to make a seal as close as possible to the glass and then dissolving out the metal with boiling aqua regia. If water under slight pressure passes through the holes they will be quite adequate for hot solvent. A 600 watt electric plate with layer of molten solder was used for heating purposes, except for ether (as solvent for ipecacuanha preparations), when steam bath suffices. The extractor (a), which is shown separately in Fig. 1A, is attached to a 200 c.c. Erlenmeyer flask, and 20 c.c. of filtrate, 2 c.c. of ammonia (8 per cent.), and 25 c.c. of benzene are added. The whole is shaken slightly to prevent settling of solid matter at the bottom, and funnel tube (b) is introduced. Benzene is then added until about 50 c.c. overflows. Brisk boiling should occur when apparatus is in full operation, and a fine spray of

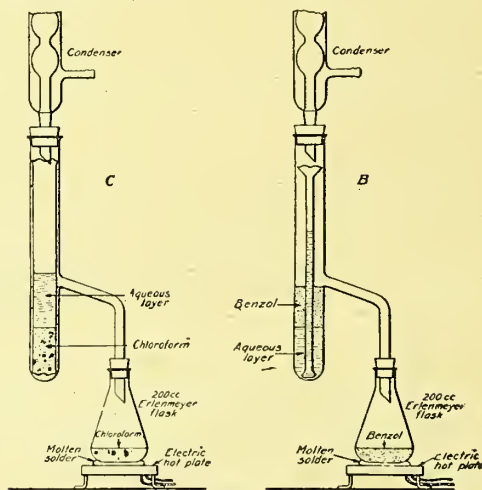


Figure 1

benzene rises through the aqueous layer, the extraction being continued for 1 to 2 hours. On completion the supernatant benzene is added to main extraction and the solvent recovered. After completing evaporation of solvent on steam, the alkaloids are taken up on a little alcohol and evaporation repeated to remove all traces of ammonia. The alkaloid is titrated in the usual way, using methyl red as indicator. Fig. 1C illustrates the "simple" apparatus with open tube (c) used for solvents heavier than water. A second illustration shows an apparatus more difficult to construct in which the solvent is forced as vapour through the aqueous solution, but the above are adequate for the great majority of pharmaceutical extractions.

### PHARMACEUTICAL CHEMISTRY

**Acid Number of Balsam of Peru.**—L. van Itallie and W. J. van Eerde ("Pharmaceutisch Weekblad," May 9, 1925) recommend the following procedure for the determination of the acid number of balsam of Peru: 1 gram of balsam is vigorously shaken for five minutes with a mixture of 3 c.c. of concentrated alcohol and 10 c.c. of N/10 solution of ammonia; add 1 gram of sodium

## The Progress of Pharmacy and Allied Sciences

chloride and shake the whole until a clear liquid layer separates. Dilute with 100 c.c. of water, and titrate the excess of ammonia with *N*/10 hydrochloric acid, after adding 3 drops of methyl red solution.

**Fehling's Solution.**—To ensure the keeping properties of Fehling's solution, G. Pégurier ("Répertoire de Pharmacie," September 10, 1925) recommends the preparation of three solutions: (A) 150 grams of tartaric acid in 450 c.c. of water; (B) 52.5 grams of copper sulphate and 10 drops of sulphuric acid in 250 c.c. of water; (C) solution of sodium hydroxide (French Codex, 30 per cent.). The three solutions will keep indefinitely without alteration, and when required are mixed in the following proportions: A 45 c.c., B 25 c.c., C sufficient to produce 150 c.c. For quantitative tests, 10 c.c. of this mixture corresponds to 0.05 gram of glucose.

**Methylene Blue Assay.**—T. Sabalitschka and W. Erdmann ("Chemiker-Zeitung," July 7, 1925) propose the following method for the assay of methylene blue: To 50 c.c. of a solution of 0.15 gram of methylene blue in 100 c.c. of water add gradually 10 c.c. of *N*/10 solution of iodine and sufficient water to form a clear layer over the precipitate. Titrate with *N*/10 solution of sodium thiosulphate until the aqueous layer assumes a definite blue coloration. Subtract the number of c.c. of sodium thiosulphate solution required from 10 and multiply the difference by 12.46, the resulting figure indicates the percentage of methylene blue hydrochloride; on multiplying the same figure by 10.66 the content of anhydrous methylene blue is ascertained.

**Composition of Bismuth Tartrates.**—L. E. Warren ("Journal of the American Pharmaceutical Association," June, p. 478) calls attention to the diversity in composition of bismuth tartrate compounds for the treatment of syphilis. The salt, prepared by Cowley's method, is bismuth tartrate, 61.1 per cent. bismuth and 32 per cent. tartaric acid, with small amounts of potassium and sodium as impurities. Owing to an error of Sazarac and Levaditi this compound is stated to be potassium sodium bismuth tartrate, and is sold in oily suspension as Trepol. The latter on examination contained 72.1 per cent. bismuth, with potassium sodium tartrate and calcium carbonate as impurities. Potassium bismuth tartrate from the Dermatological Research Laboratories had the composition claimed ( $K_2Bi_2C_4H_2O_{12} + 4H_2O$ ) and contained 65.73 per cent. of bismuth and 20.5 per cent. tartaric acid. Luatol, as made by the Powers-Weightman-Rosengarten Co., corresponded reasonably to potassium-sodium-bismuth-tartrate containing nine molecules of water of crystallisation. Specimens from other manufacturers stated to be this compound were sodium bismuth tartrate or insoluble bismuth tartrate.

**Keeping Properties of Insulin.**—A. Neave Kingsbury ("Lancet," I, 1925, p. 18) writes regarding the question of the deterioration of insulin in the tropics that there is trustworthy evidence that some samples show considerable decrease in activity, while others retain their original potency for many months. It is concluded that insulin may be stable at tropical temperature, but some batches are either impure or the character of the solution renders the preparation unstable. The logarithmic character of the curve obtained from Stott's results certainly shows that dissociation occurs in some batches. Insulin is known to be more stable in acid than in neutral solution, and it can be autoclaved at 125° for twenty minutes with a loss in activity of 20 to 25 per cent. only, if in solution of  $P_H$  2, but that it loses all activity if the procedure is carried out in solution of  $P_H$  4. The author has noted that a batch which gave indifferent clinical results was less acid in reaction than a more active sample, so that the  $P_H$  of the insulin solution may be a factor in the deterioration of insulin at tropical temperatures. A batch of insulin was stored for six months in the tropics and then reassayed on local rabbits. It appeared to have deteriorated by about 40 per cent. The reassay was also done on the first local generation of recently imported rabbits. The results then indicated little, if any, deterioration.

**Quinine Iodobismuthate.**—M. François and Mdle. L. Seguin ("Journal de Pharmacie et de Chimie," July 16, 1925) describe the preparation of amorphous quinine iodobismuthate, of the constitution  $(BiI_3)_2 \cdot C_{20}H_{24}N_2O_{12} \cdot 2HI$ , with a content of 23.66 per cent. of bismuth, 57.79 per cent. of iodine, and 18.42 per cent. of quinine. Introduce, into a flask of 5,000 c.c. capacity, 4,500 c.c. of water and 150 c.c. of hydrochloric acid (sp. gr. 1.171). To prepare the iodo-bismuthic reagent, 12.5 grams of bismuth carbonate and 125 c.c. of water are shaken in a flask of 250 c.c. capacity, and 25 c.c. of hydrochloric acid (sp. gr. 1.171) added; when solution has been effected, add gradually, in small portions, 62.5 grams of potassium iodide, and finally complete with water to 250 c.c. The resulting orange-red solution is then filtered. On the other hand, dissolve 11.05 grams of acid quinine hydrochloride in 100 c.c. of water and 12.5 c.c. of hydrochloric acid (sp. gr. 1.171), and complete with water to 250 c.c. Filter. Add the 250 c.c. of iodo-bismuthic reagent to the dilute hydrochloric acid and shake, then add the solution of quinine hydrochloride. On shaking the mixture an abundant bright red precipitate is thrown down. At the end of two hours the supernatant clear liquid, amounting to about 4,000 c.c., is decanted, and 1,000 c.c. of water is added to the contents in the flask. After one hour decant again the liquid, and after repeating this procedure four times collect the entire precipitate on the filter. Owing to the readiness with which all iodobismuthates decompose, a prolonged washing of the precipitate should be avoided. Finally, the precipitate is dried at ordinary temperature, or at 40°. The yield amounts to 42 grams.

**Yohimbine Assay.**—R. A. Feldhoff ("Pharmazeutische Zeitung," June 30, 1925) gives the following method for the determination of yohimbine in yohimbe bark:—The bark is reduced to a very fine powder, and a weighed amount—100 or 50 grams—is then moistened with a 10 per cent. solution of sodium carbonate, whereupon it is dried. The desiccated mass is then transferred to a Soxhlet apparatus and extracted with dichlorethylene, which is taken up in a solution of 2 grams of oxalic acid in 50 c.c. of water. When the drug is exhausted, the dichlorethylene is removed by distillation, and the oxalic acid solution, which contains the alkaloids, is transferred to a separator. A layer of ether is added, and sufficient strong solution of ammonia (sp. gr. 0.91) to precipitate the alkaloids; after vigorously shaking the mixture the ethereal layer is removed, and the residue is twice shaken with ether. The collected ethereal extracts are thoroughly dehydrated by means of calcium chloride or sodium sulphate, and filtered into a beaker. The alkaloids are then precipitated by the addition of a strong solution of hydrochloric acid in alcohol; the ether is removed, and 30 c.c. of anhydrous acetone is added to the syrupy alkaloidal precipitate. This dissolves the secondary alkaloids, and to effect the crystallisation of the yohimbine hydrochloride the beaker is placed in an ice chest for 24 hours. The crystals are now collected on a weighed filter and washed, first with pure acetone and then with anhydrous ether, whereupon the filter is dried at 102°. The yohimbine hydrochloride crystals thus obtained are almost white; melting-point about 286°. The average yield of yohimbine hydrochloride is 1 to 1.5 per cent.; recently some barks have been found to show a high content of alkaloids, but no yohimbine.

**Wormseed Assay.**—To determine the content of santonin in wormseed, R. A. Feldhoff ("Pharmazeutische Zeitung," May 20, 1925) adopts the following procedure: 10 grams of powdered wormseed is exhausted with ether in a Soxhlet apparatus, and the ether removed by distillation. The residue is dissolved in 6 to 7 grams of alcohol (90 per cent.), 25 to 30 grams of hot water is added, and the mixture is boiled under a reflux condenser for 5 to 10 minutes. The hot alcoholic solution is thrice filtered through small pledgets of cotton wool, and the latter are washed twice with 10 c.c. of hot alcohol (15 per cent.) and once with 10 c.c. of hot water; the washings are collected and kept separate. The alcoholic solution is heated to boiling, and 1.5-3 c.c. of

## The Progress of Pharmacy and Allied Sciences

lead acetate solution (10 per cent.) is added to precipitate the resin, whereupon the mixture, whilst hot, is immediately filtered. The precipitate is then washed with the collected washings, previously heated to boiling. On cooling, the filtrate is shaken with 60 c.c. of chloroform, the chloroformic layer is filtered through a filter previously moistened with chloroform, and the chloroform removed by distillation. The residue, consisting of santonin and resin, is boiled with 35-40 c.c. of alcohol (15 per cent.), and filtered, the contents of the filter are washed with two portions of 5-6 c.c. of boiling alcohol (15 per cent.). After standing for 24 hours in a cool place, the santonin crystallises out of this solution and is collected on a weighed filter; the flask and the filter are washed twice with alcohol (15 per cent.), and the filter with the crystals dried to constant weight. Assayed by this method, wormseed obtained from the London agents of the Russian monopoly was found invariably to possess an average content of 2 to 2.2 per cent. of santonin.

**Santonin Assay.**—As a result of an exhaustive comparative investigation of the various methods in use for determining the content of santonin in wormseed and also of a study of the various factors involved, R. Eder and W. Schneider ("Schweizerische Apotheker-Zeitung," July 18, 25, August 1, 8, 1925) recommend the following test for inclusion in the pharmacopoeia:—10 grams of finely powdered wormseed is frequently shaken during thirty minutes with 100 grams of benzol. Filter 81 grams of the liquid through a folded filter of 18 cm. diameter into an Erlenmeyer flask of 150 c.c. capacity and remove the whole of the benzol by distillation on a water bath. Add to the residue, when cold, 40 c.c. of alcohol (15 per cent.) and boil for fifteen minutes under a reflux condenser. Filter the liquid while hot through a pledget of cotton wool into an Erlenmeyer flask of 100 c.c. capacity; wash the first flask and the pledget of cotton wool with two portions of 5 c.c. of hot alcohol (15 per cent.). On cooling, add 0.1 gram of kaolin, boil for fifteen minutes under a reflux condenser, and filter while hot through a folded filter of 6 cm. diameter into a tared flask of 100 c.c. capacity; rinse the flask and filter two or three times with 5 c.c. of hot alcohol (15 per cent.), and set the closed flask aside at ordinary temperature, protected from light, for twenty-four hours, occasionally agitating the contents. The weight of the liquid is now determined, whereupon it is filtered through a weighed smooth filter of 6 cm. diameter; the flask and filter are washed with a small amount of cold water. Flask and filter are dried at 100° for one hour, and on cooling are placed in an exsiccator for thirty minutes and weighed. For each 10 grams of solution add 0.006 gram to the weight of santonin ascertained. The amount of santonin determined represents the content in 8 grams of drug. This method can only be adopted when the santonin content of the drug exceeds 0.45 per cent., since 60 grams of cold alcohol (15 per cent.) maintain in saturated solution 0.036 gram of santonin.

**Preparation of Insulin.**—D. A. Scott and C. H. Best ("Industrial and Engineering Chemistry," March 1925, p. 238) give particulars of the present process used for extraction of insulin. The fresh pancreatic glands, free as possible from fat and connective tissue, are collected hourly and placed in a refrigerator at -4°. After weighing they are minced with a power chopper, the divided material dropping into acid water (4 gallons of water containing 500 c.c. strong sulphuric acid to every 100 lb. of glands). After one hour digestion with slow agitation, 95 per cent. alcohol is added (25 gallons for each 100 lb.). Two hours later the alcoholic extract is separated in a rotary centrifuge. The solid material, from the centrifuge is re-extracted with 60 per cent. alcohol (equal in volume to the liquid centrifugal extract), and after standing overnight, this second extraction is centrifuged. The mixed first and second extractions are filtered through glass funnels with fluted filter papers. The filtrate is partially neutralised with sodium hydroxide solution (240 c.c. of 50 per cent. NaOH to each 50 gallons of filtrate). The alcoholic extract is

concentrated in an efficient vacuum at a temperature below 30° C. to one-fifteenth of its original volume. The concentrate is quickly heated to 50°, and the lipid and other materials, which then readily rise to the surface, are filtered out. The pH range should be between pH 2 to pH 2.5, to insure rapid filtration and avoid loss of potency. Ammonium sulphate is added to the cooled concentrate to half saturation\* (37 grams per 100 c.c.); on stirring, protein material separates out almost immediately, and after standing for half an hour, is skimmed off. As much liquid as possible is pressed out. From 300 lb. of glands about 200 grams of moist precipitate is obtained. The precipitate is dissolved in hot acid alcohol (usually 1 litre, 50 per cent. alcohol, containing 5 c.c. normal HCl), the temperature being kept between 35° and 45°. When the precipitate has completely dissolved, 10 volumes of warm alcohol are added and the solution neutralised with 5 c.c. of N/5 NaOH. On cooling to room temperature, the solution is placed in a refrigerator at 5° for two days, when the dark-coloured supernatant alcohol, practically devoid of potency, is decanted, and the precipitate dried *in vacuo*. It is then dissolved in acid water, in which it is readily soluble, and made alkaline (pH 7.3 to 7.5). A dark-coloured precipitate is immediately centrifuged out and washed once or twice with alkaline water (pH 9.0), and the washings returned to the main liquor. This part of the process must be performed quickly, as insulin is destroyed in alkaline solution. The acidity of the main solution is adjusted to pH 5.0, when a white precipitate readily separates out. Tricresol (0.3 per cent.) is added to assist iso-electric precipitation and to act as a preservative. After standing one week in an ice chest, the supernatant liquid is decanted and the remainder of liquid removed by centrifuging. The precipitate is then dissolved in a small quantity of acid water. A second iso-electric precipitation is carried out at approximately pH 5.0 and centrifuged after standing overnight. The precipitate containing the active principle in a comparatively pure form is dissolved in acid water and the hydrogen-ion concentration adjusted to pH 2.5. The material is tested for potency and then diluted to 10, 20, 40, or 80 units per c.c., with addition of 0.1 per cent. tricresol and sufficient sodium chloride to make the solution isotonic. After passing through a Mandler filter, the potency is retested, though there is practically no loss in "Berkefelding." The sterility of the product after filling into ampoules is also tested. Great care must be observed during the process to avoid contact of insulin solutions with metallic surfaces. Rabbits (approximately 2 kilograms) starved for twenty-four hours are used for testing potency, the unit being one-third of the amount of insulin material required to lower the blood sugar of a 2-kilogram rabbit from normal (0.118 per cent.) to 0.045 per cent. over a period of five hours. The yield of insulin is 1,800 to 2,200 units per kilogram of pancreas. Other workers' figures per kilogram of pancreas are: Murlin (hot acid water), 5,500 units; Dodds and Dickens (picrate acetone extraction), 5,500 units; Moloney and Findley (benzoic acid alcohol), 4,500 units; Dudley and Starling (sodium bicarbonate alcohol), 1,500 units.

### BOTANY

**Transmission of Stimuli in Plants.**—Sir J. C. Bose ("Proceedings of the Royal Society," August 1, No. B. 690, Vol. 98) has arrived at the conclusion that the transmission of excitations of the pulvinus of *Mimosa pudica* is wholly protoplasmic and corresponds to that of animal nerve. This is based upon arrest of transmission by electrotonic block, the excitation being unable to pass along a tissue when an electrical current is passing, whilst "make" and "break" of the current causes the leaves to fall in opposite directions. Investigation with an electric probe confirmed the anatomical observations that the tissue transmitting excitation is the phloem. Safranin stains the contractile cells of the pulvinus more deeply with increasing sensitivity to stimuli, which, along with the reduction of osmic acid suggests that the energy of con-

## The Progress of Pharmacy and Allied Sciences

traction is due to the readily oxidisable substance, which is not a lipid. Temperature increase and desiccation increase the velocity of transmission.

**Development of *Cheilanthes Odora*.**—I. Horvat ("Izvesca Botanickog Zavoda kr. sveucilista u Zagrebu," Vol. I, 1925) has studied the development of both generations of *Cheilanthes odora*, Web and Berth, and the affinities of this genus with the family of *Schizaceae*. His investigations are summarised in the following conclusions:—At the beginning the gametophyte grows with its apical cell and then with its central meristem. The membranes of the vegetative cells show a columnar swell in the corners and lateral walls. The structure of the sexual organs does not show anything particular. The antheridia opercula cell is undivided. At first the sporophyte is covered with hairs, but in an advanced stage its trunk is covered with scales. Its structure is dictyostelic; in the xylem there are besides the tracheids parenchyma cells. In the stele of the petiole the xylems are separated at the base. The sorus develops into quite a low receptacle in the immediate neighbourhood of the leaf margin and the small number of the sporangia in a definite succession of time and space. The structure of the sorus is that of the *Gradatae*. The sporangium develops from one cell, which has slightly risen above the level of the receptacle. The first segment-wall extends from the outer to the inner (basal) periclinal wall of this cell. The tapetum is normally differentiated; the section of the archesporia shows a small spore output. The annulus does not reach the insertion of the stalk nor the differentiated stomium. The spores have no periplasmodium. Certain characteristics in the ontogenesis of the investigated species warrant, in the author's opinion, conclusions as to the origin and the affinity of the genus *Cheilanthes* and its near undiusiate mixtæ. The characteristic swelling in the prothallial cells, as well as the position of the sorus, show a genetic connection with the *Schizaceae*. The first segmentation of the sporangia indicates primitiveness, and is quite the same as that of the *Schizaceae*. The structure of the sorus shows an advance. The gradated development of the investigated fern is a transition from the primitive type of the *Schizaceae* to the most derived ones of the *Cheilantheae*, to which it is linked through the structure of the ripe sporangium and a small spore output. Hence these investigations have established the suggested relationship of the genus *Cheilanthes* as the link between the most primitive and the most derivate undiusiate *Marginales*.

### ANALYTICAL CHEMISTRY

**Lactic Acid Test.**—According to L. Ekkert ("Pharmazeutische Zentralhalle," August 20, 1925), if 1 or 2 c.c. of dilute lactic acid is carefully layered over a solution of a few centigrams of pyrocatechin in 5 or 6 c.c. of concentrated sulphuric acid, an intense blood-red colour develops immediately at the junction of the two liquids. The test is extremely sensitive, and the colour is apparent in the presence of 0.02 per cent. of lactic acid.

**Amylene Hydrate Test.**—L. Ekkert ("Pharmazeutische Zentralhalle," September 10, 1925) reports that on layering a 5 per cent. solution of tartaric acid on a mixture of 0.5 c.c. of a 5 per cent. alcoholic solution of amylene hydrate and 5 c.c. of concentrated sulphuric acid, a pinkish coloration first of all develops at the juncture of the two liquids and gradually the whole of the upper layer assumes the same colour. The coloration is still apparent when using only one drop of a 5 per cent. alcoholic solution of amylene hydrate (=3 milligrams); it also develops with guaiacol, potassium guaiacol sulphonate and resorcin, but tartaric acid gives the most brilliant colour.

**Extraction of Alkaloids from Organs.**—For the extraction of alkaloids and other organic compounds from viscera or other animal organs, R. Fabre ("Répertoire de Pharmacie," August 10, 1925) suggests submitting the

tissues to the action of pancreatin. The organs are pulped and then mixed with 5 parts of water; the mixture is heated to boiling, and on cooling to 50°-55°, it is transferred to a wide-mouthed flask, adding 1 gram of pancreatin for every 50 grams of pulp. The flask is maintained for 10 to 12 hours at a temperature of 50°-55°, at the end of which the proteolytic action is complete. The contents of the flask are now heated to boiling and filtered; the resulting clear liquid is then treated with the usual solvents to extract the alkaloid. The author found that by this method strychnine, narcotine, veronal, and sulphonal are not altered by pancreatin.

**Vitamin A** continues to be the subject of much research. H. C. Sherman and his co-workers ("Journal of the American Chemical Society," Vol. 47, p. 1,639) lay down conditions for quantitative testing for this vitamin in foodstuffs, and the unit suggested for Vitamin A is the minimum food allowance which will produce an average gain of 3 grams per week in a standard test animal (albino rats of known nutritional history). The distribution of Vitamin A in body tissues varies greatly, the lung and kidney being 40 times and the liver 200 to 400 times as rich in Vitamin A as muscle. It was also found that Vitamin A in amounts sufficient for normal growth and good health may be insufficient to meet additional demands of successful reproduction and lactation. Such failure in early adult life is attended with increased susceptibility to infection, particularly to lung disease corresponding to pulmonary tuberculosis in young men and women.

**Camphor Assay.**—O. Aschan ("Finska Apotekareföreningens Tidskrift," p. 49, 1925) describes the following method for the quantitative determination of camphor: 1 gram of the substance to be examined is dissolved in 2 grams of glacial acetic acid, in a test tube, and 1 gram of semicarbazide hydrochloride as well as 1.5 grams of potassium acetate (anhydrous) are added to the solution. After mixing the contents with a glass rod, the tube is closed by means of a pledget of cotton wool and placed in a water bath at about 70° for three hours. On cooling, 10 to 15 c.c. of water is added; the contents are then stirred until complete solution of the salts is effected, and then passed through a weighed filter. The test tube, glass rod and filter are washed with water until a drop of the filtrate, evaporated on a glass slide, leaves no residue. The contents of the filter are dried at ordinary temperature, washed with petroleum ether, and again dried to constant weight. The increase in weight (A) indicates the amount of camphor-semicarbazone ( $C_{10}H_{16} : N.NH.CO.NH_2$ ) formed, and the amount of camphor present in the substance can be ascertained by the following equation:  $209 : 152 = A : x$ .

**Alcohol Test.**—On adding a mineral acid to an aqueous solution of methyl violet a gradual change of colour takes place, i.e., at first the violet colour changes to blue, then on the further addition of acid, to green, and finally yellow. J. Stamm ("Farmaceutiskt Notisblad," January 1925) found that these changes in colour take place very rapidly in the presence of alcohol, and for the detection of alcohol, or water, in ether, chloroform and in essential oils he recommends the use of this test. The reagent is prepared by dissolving 0.05 gram of methyl violet, or crystal violet, in 20 c.c. of methyl alcohol and adding 0.1 c.c. of pure concentrated sulphuric acid. To apply the test, place eight drops of the reagent in the centre of a porcelain capsule of 60 c.c. capacity, and allow the liquid to spread over the lower half of the capsule by gentle agitation, thereupon evaporate on a water-bath to dryness. During the process of evaporation the blue colour quickly changes to green, then to yellow, and finally to orange. If this orange-coloured residue is brought into contact with a substance containing water or alcohol it immediately assumes a violet coloration. One drop of an essential oil containing as little as 1 per cent. of alcohol immediately produces an intense violet colour.

## The Progress of Pharmacy and Allied Sciences

**Chemical Analysis of Insulin.**—J. J. Abel and E. M. K. Geiling ("Journal of Pharmacology and Experimental Therapeutics," July 1925) have succeeded in isolating from insulin (Lilly) crystalline amino-acids, protein-like fractions of varying sulphur content and low phosphorus content, and such as have a medium or relatively low sulphur content and a high phosphorus content. The active insulin can be removed completely from each of these fractions so that they no longer show a trace of the characteristic hormone. In the course of the purification the insulin rabbit unitage was raised from 8 and 12 to more than 40 in one fraction. Proof is furnished that when an "insulin" high unitage is boiled for a short time with tenth-normal sodium bicarbonate the resultant physiological inactivation is always associated with an alteration in the linkage of a part, if not all, of the sulphur of the hormone. Ammonia is not liberated by this treatment. The authors found that inert fractions contain very little of this labile sulphur, and in all fractions the content of labile sulphur, more especially what the authors have called the "sodium carbonate sulphur," appears to be directly proportional to the degree of hypoglycæmic activity—that is to say, the higher the amount of "sodium carbonate sulphur" present in a given preparation the higher is its potency. Phosphorus is not a constituent of insulin.

**Analysis of Cutch and Gambier.**—Dr. David Hooper ("Analyst," April 1925, p. 165) has applied the method of A. Chaston Chapman of determining tannin, by precipitation with cinchonine, to the analysis of tanning containing materials. Extracts of these, containing about 4 grams of soluble tanning material per litre and 50 c.c. of the solution, are treated with a saturated aqueous solution of cinchonine sulphate (which yields 1.3 per cent. of dry salt on evaporation). The precipitates are allowed to aggregate for one hour and filtered into alundum crucibles and the precipitate washed with half-saturated cinchonine sulphate solution. The precipitates are air-dried on porous plates for a day before completing evaporation of water in water oven. Comparative analyses of tannin determination by "hide powder" and cinchonine methods gave the following results:—

Tanning material	Tannin by hide powder	Tannin by cin- chonine	Nitrogen in cin- chonine tannate	Factor
Quebracho extract..	70.4	67.2	3.8	0.60
China galls ..	61.2	60.5	3.5	0.63
Bagdad galls ..	59.6	58.6	—	0.63
Mangrove bark ..	28.5	20.2	2.4	0.75
Sumach ..	24.0	23.0	3.9	0.59
Mimosa bark ..	24.0	14.3	3.5	0.63
Myrobalans ..	22.8	20.9	3.4	0.64
Kino, Indian ..	28.8	24.9	3.2	0.66
Kino, Eucalyptus ..	20.4	16.3	3.5	0.63
Cube Gambier ..	40.4	10.0	3.8	0.60
Acacia catechu wood	6.7	3.7	3.5	0.63
Tea ..	13.0	12.6	4.3	0.55
Oak bark ..	7.1	5.3	3.5	0.63

The factor in the last column is obtained by dividing the percentage of nitrogen by 9.5, the cinchonine thus found being subtracted from the tannate to give the figure for tannin. The accordance in the two methods is good with richer tanning materials only. The greatest disparity is due to the presence of catechin, which is not affected by cinchonine, but is absorbed by hide powder, and occurs with cube gambier and the heartwood of acacia catechu. This difference gives the cinchonine method a special value in discriminating between tannin and catechin in cutch and gambier. Analyses of eight commercial samples of catechu showed no definite catechin/tannin ratio. Also, the catechin content varied between 1 and 43.4 per cent., and tannin from 3 to 44.5 per cent.

### BIOLOGICAL CHEMISTRY

**Vitamin D**, or the antirachitic vitamin, can be produced by irradiation of olive oil or other vegetable oil by irradiation with sunlight, electric arc, or mercury

vapour lamp. H. Steenbock and A. Black ("Journal of Biological Chemistry," 64, p. 263) find that over-exposure, or irradiation for periods of longer than five hours, destroys both the natural vitamin activity of cod-liver oil and the induced activity of olive oil. In the dark irradiated olive oil retained its activity for ten months, but rancid oils with acid reaction are not activated by irradiation.

**Gelation of Living Cells** in cultures of embryonic tissues has been studied by Mrs. G. M. Lewis ("Carnegie Institute of Washington Year Book," No. 23). She finds that in saline solutions, acidified to pH 4.6 with any ordinary acid they exhibit all the appearances of death, with granular nucleus surrounded by thick membrane and cessation of pseudo-podial extrusion. The cells, however, recover if the acid solution is washed away, and the reversal of life and apparent death can be accomplished several times. The acids from (sterile) dead cells were particularly effective and this affords an explanation of the toxic nature of bruised or burned tissue. Bathing by alkali pH 8.6 to 9.0 causes living cells to spread out and round off, and on washing, the cells recover to some extent, but never completely.

**Standardisation of Solution of Parathyroid Hormone.**—J. B. Collip, E. P. Clark and J. W. Scott ("Journal of Biological Chemistry," 63, p. 395, and 64, p. 485) have prepared a filtered extract of parathyroid glands. The fresh glands are treated with 5 per cent. hydrochloric acid for one hour at 100°, and the solution made alkaline after removal of fat and proteins. Hydrochloric acid is again added to give maximum precipitation. The filtered solution, when administered to parathyroidectomised dogs (by mouth or as injection), removes tetanic symptoms and restores the level of blood calcium to normal. A single inactive dose of a still further purified preparation proved to be relatively harmless, and it is suggested that the potency of parathyroid extract can be estimated by the rise in calcium in blood serum of dogs. The provisional unit suggested is one-hundredth of the amount required to increase serum calcium by 5 milligrams per 100 c.c. in a 20-kilogram dog within 15 hours.

**Antisterility Vitamin.**—The evidence of the existence of a reproductive or antisterility Vitamin E is becoming more and more conclusive. H. M. Evans and G. O. Burr ("Proceedings of the U.S.A. National Academy of Sciences," Vol. 11, p. 334) find that this vitamin is a fat-soluble vitamin and exists in certain cereals, notably wheat germ and lettuce, lucerne, pea and tea plants. It is stable to heat, light, acids, alkalies, and air, and wheat germ oil can be hydrogenated with palladium as catalyst without injury to the vitamin. Rats fed on synthetic diets containing a sufficiency of Vitamins A and B sooner or later became sterile, but fertility followed the administration of 250 milligrams daily of desiccated wheat germ or 25 milligrams of either extract of wheat germ or lettuce leaves. The vitamin is found with the sterols in the unsaponifiable matter of wheat germ oil. On purification with digitonin, boiling methyl alcohol, and distillation under reduced pressure, a yellow oil was obtained of extreme potency, 5 milligrams and 3 milligrams daily restoring fertility to rats of proved sterility when kept on synthetic diets.

**Tuberculin.**—As a result of an investigation into the chemical composition of the active principle of tuberculin, E. R. Long and Miss Florence B. Seibert ("Journal of the American Medical Association," August 29, 1925) have established that the active principle is non-dialysable; it is not absorbed by animal charcoal; is destroyed by trypsin; is maximally but incompletely precipitated by acetic acid at pH 4.0, and is completely precipitated by saturation with ammonium sulphate. The product precipitated by ammonium sulphate is of protein nature, and can be separated into three protein fractions: (1) A water-soluble heat coagulable protein; (2) a non-coagulable, alkali soluble, water-insoluble protein; and (3) a non-coagulable, water-soluble protein. Of these, the first and third appear to be the most potent. The

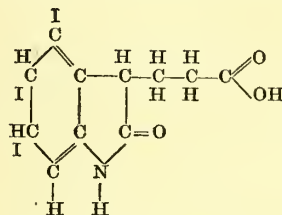
## The Progress of Pharmacy and Allied Sciences

nature of the highly specific toxic action of this substance on the tissues of a tuberculous animal is not known. Preliminary experiments indicate that the tissues of the sensitised (tuberculous) animal do not act on tuberculin in such a manner as to render it toxic for normal animals, nor do they bind the active principle in appreciable quantity, so as to render a tuberculin preparation less toxic for another tuberculous animal.

**Antirachitic Action of Irradiated Cholesterol.**—By means of special absorption tests a chemical change was demonstrated by A. F. Hess and M. Weinstock ("Journal of Biological Chemistry," May, 1925) in cholesterol which had been endowed with antirachitic potency by ultra-violet irradiation. This activated cholesterol absorbs ultra-violet radiations to a less degree than does ordinary cholesterol, an effect which is intensified with increasing degrees of irradiation. If, however, irradiation is prolonged for many hours the activated cholesterol becomes less transparent than even non-irradiated cholesterol. This comparatively opaque product is of a yellowish colour and has a lowered melting-point. Dry milk, flour and spinach were rendered antirachitic by the authors, by radiations from a quartz mercury vapour lamp. This potency was maintained by the spinach after it had been boiled for one-half hour. Oleic acid and egg phosphatide cannot be activated by this means. Irradiated cholesterol was found to prevent rickets when given by the subcutaneous route. A series of tests with selective filters showed that the radiations which render cholesterol active biologically are similar in their wave lengths to those which have been found to protect animals against rickets when they are directly exposed to the rays. Irradiated cholesterol is effective in preventing the rickets brought about by a diet either low in phosphorus or low in calcium.

**Vitamine A from Sunlight.**—Leonard Hill ("British Medical Journal," II, 1925, 470), in a discussion on the influence of sunlight and artificial light on health, states that the defective calcification of the growing bones in rickets results from a diet deficient in antirachitic substance and lack of ultra-violet rays. If young rats are put on a diet deficient in antirachitic substance and having a minimum of salts of phosphorus, the latter is not absorbed from the gut. Either the addition of antirachitic substance in cod-liver oil or ultra-violet radiation for a few minutes a day will wholly stop rickets developing, and cause a minimal amount of phosphorus in the diet to be absorbed and utilised in bone building. It has been proved that the antirachitic substance present in cod-liver oil is not vitamin A, and that it can be put into an inactive food by ultra-violet radiation. Oils retain their acquired antirachitic power for months. It has been claimed that "active" food substance on oxidation gives off ultra-violet rays, but this is not so. The error has arisen through the fluorescence of certain quartz screens used in the photographic tests. The antirachitic substance is produced by radiation of cholesterol or a vegetable sterol. There is no evidence so far that radiation can endow an inactive food with the growth qualities pertaining to vitamin A. If this should prove possible, the margarine makers will have found a fresh source of fortune in being able to claim that their product is made equal to butter. Rickets can be prevented by making the diet more adequate—for example, by cod-liver oil—and also by teaching mothers the need of exposing infants' and children's bodies to the sunlight, and by the use of artificial sun-baths at infant welfare centres. Ultra-violet rays improve the growth and breeding power of fowls. Acting directly on embryos, they produce monsters. The loss of breeding power in man and domestic animals such as cattle and tuberculosis in cattle as well as in men are probably due largely to indoor life. It has been stated that artificial sun treatment cannot approach the real article in curative effect. The author's experience, however, has shown that arc-light baths, properly regulated and accompanied with advice as to exposure to cool open air, exercise, and diet, can effect cures in London which appear to be no less good than those reported from Alpine sanatoriums.

**Thyroid and Oxidation in Animals.**—E. C. Kendall, in a Chandler lecture at Columbia University on February 13 ("Industrial and Engineering Chemistry," May, p. 525), recalled his isolation of thyroxin in 1914 and discussed the quantitative relationship between thyroxin and rate of basal metabolism. One milligram increases the latter by 2.5 per cent., and, within limits, the increase is in direct proportion to the amount of thyroxin used. The change is in all probability fundamental. Increase of blood flow, increase in moisture of skin, and decrease in conduction time of nerves to heart are indirectly due to the increased rate of metabolism. The increased utilisation of oxygen and corresponding output of carbon dioxide are directly due to the functioning of thyroxin (injection of one mgm. of thyroxin produces increase of 400,000 mgm. of CO<sub>2</sub>). In striking contrast to the almost instantaneous response of the animal organism to adrenalin, there is a delay of 6 to 8 hours after thyroid injection, and the maximum effect on basal metabolic rate is not attained until 8 to 10 days have elapsed, whilst the effect may last 5 to 6 weeks. The formula which best represents thyroxin is 4, 5, 6; tri-iodo, 5, 6; dihydro - 2 - oxindole propionic acid:—



As a working hypothesis thyroxin may be pictured as a compound that can be acted upon in its open ring form by mild oxidising agents, including molecular oxygen. By an intramolecular rearrangement, closing the pyrrolidone ring, the activity of this grouping is much increased and its oxidation potential raised to such an intensity that it can enter into the reactions involved in oxidation. The result is reduction of the imine group, replacing it with two hydrogen atoms, while the pyrrolidone ring re-opens and the cycle is again repeated. The two essential steps are the opening and closing of the pyrrolidone ring, in both of which reactions the iodine in the benzene ring exerts a dominating influence.—C. S. Hicks ("Journal of the Chemical Society," April, 1925, p. 771) has studied the absorption spectra of thyroxin and tryptophane, as the latter, which cannot be synthesised by animals, is a likely starting-point for the production of thyroxin. There is a definite "family" resemblance in the ultra-violet absorption spectra of thyroxin, tryptophane, and 2-hydroxyindole-3-propionic acid, two chief bands being in all three spectra. Thyroxin also shows a small but definite band at 2,750 A.U., and, as might be expected, the bands are shifted more towards the red.

**Microscopical Examination of Cancer Viruses.**—The optical evidence of the existence of the viruses associated with cancerous growths and the paper by J. E. Barnard ("Lancet," July 18) is supplementary to, and directly follows, that of Dr. Gye summarised below. The introduction discusses the absence of any method of standardising filters for viruses, and suggests that the limits of microscopical resolution might be taken as a suitable standard of reference in preference to permeability of a filter. Thus organisms less than 0.25 micron at greatest diameter should be regarded as "filter-passers," but some more suitable name might well be found. The main factors governing microscopical delineation are the numerical aperture (N.A.) of the objective and the wave length of light employed. The full resolving power (N.A. = 1.4) can only be obtained with oil immersion objectives, and as regards objects in water the numerical aperture cannot exceed 1.27, and in practice N.A. 1.20 is used for preliminary and routine observations, an object 0.35 micron being the smallest to be seen with perfect resolution by methods of dark-ground illumination. The limitation of dark-ground

## The Progress of Pharmacy and Allied Sciences

methods in the search for filterable viruses (of about 0.1 micron diameter) is obvious, but in practice it has been found that much preliminary work can be done. The only other method likely to be of service is use of light of a shorter wave length, as a body can be photographed of approximately one-half the dimensions of the wave length used for illumination, so that by the use of ultra-violet light it is possible to obtain a real image of a small body if the wave-length is short enough. The apparatus used was a specially constructed microscope with quartz lenses in objective, ocular and illuminator. One of the photographs of colonies of virus cultures, reproduced in the original paper, taken in ultra-violet light of 257  $\mu$  wave-length with a magnification of  $\times 2,200$ , shows the particulate character of the spheroids. It is estimated from this and other photographs in the same wave-length that the size of the particulate form of the virus is 0.075 micron. The virus organisms of pleuropneumonia and cancer show no essential difference, except that with the latter malignant growths are slower in developing and do not produce such rich cultures. These organisms do not produce by division in the same manner as bacteria, the life cycle consisting of small particulate particles (found solely in young colonies), which after about 20 hours show larger spheroidal bodies near the periphery which have developed from the particulate form. A few hours later a refractile dot appears on one part of the spheroid, and later other particles develop which move away from the spheroid though retaining attachment thereto. In most cases the spheroid tends to disintegrate, and finally gets into an unstable physical state where a central spheroid is surrounded by a number of smaller spheroidal bodies. The grouping and movement in the fluid is an interesting physical phenomenon, in which a rotating spheroidal body unevenly loaded with particles appears to assume a form suggesting a spiral disposition. The author expresses the view that probably no single factor has hindered the cultivation of filterable viruses so much as the assumption that a culture in broth must become opalescent, or that growth on solid media must develop easily visible colonies. Fluid cultures from malignant growths remain clear, and colonies on serum-agar are so small that they require the use of a high-power objective to see them. The incubation period has usually not exceeded seven days, examination being made from three days onwards. In a joint note Mr. Barnard and Dr. Gye state that their belief that the small bodies seen and photographed are the actual virus depends partly upon uninoculated control tubes of medium, which were invariably blank, and partly upon the correspondence between microscopical findings and the results of animal experiments.

**The Causation of Cancer** has been the subject of a joint investigation by W. E. Gye and J. E. Barnard, which has been the subject of much comment in the lay press. The actual reports of these investigators form two technical communications, with carefully detailed experimental evidence published in "The Lancet," July 18. The new data relating to the causation of cancer are simplified and summarised below. The conclusion attained is that cancer is "a specific disease caused by a 'virus or group of viruses' which requires a second 'specific factor' for its development, this latter, which is obtained from tumour extracts, rupturing the cell defences and enabling the virus to infect." The main principles of cancer infection are:—

- (1) Neither virus nor specific factor alone can on injection induce cancer.
- (2) The virus, which is ultramicroscopic (or "filter passer"), is cultural and apparently non-specific since virus from cancerous growths of fowl, mouse, rat, dog and man produced the type of growth characteristic of the animal into which it was injected (and not that of the animal of the (different) species from which the virus was derived).
- (3) Strict specificity of animal infectivity and tissue growth accord with a "specific factor" for each species of animal and probably for each type of growth.
- (4) Cultures of malignant viruses resemble those of pleuropneumonia, the colonies of which when young consist of

particulate bodies, which later develop into spheroids, from which is budded off the particulate form (with size of the order of 0.075 micron and only resolvable with ultra-violet light of wavelength 257 millimicrons or less).

The experimental studies of Dr. Gye on cancer virus relate first of all to Rous chicken sarcoma No. 1 grown in rabbit serum. Hartley broth containing 0.2 per cent. potassium chloride. For convenience the term "primary culture" is used to designate a fragment of tumour in a tube of medium. Retention of infectivity depends upon the medium employed and the method of incubation, but is favoured by absence of oxygen and the rabbit serum addition. "Sand filtrates" were prepared by disintegrating "healthy" tumour tissue with sand, and after mixing with Ringer solution (100 cc. to 5 grams of tumour), filtering the dilution through packed paper pulp and sand. The virus in such sand filtrates is destroyed on saturation of the solution with chloroform and incubation at 37°, but both temperature and saturation are important. The evidence for the existence of the accessory factor depends upon that the chloroform treated sand filtrate contains some such labile chemical substance which renders cells susceptible to infection by virus. The loss of infectivity of primary cultures of Rous sarcoma depends upon the disappearance of this accessory chemical factor, and is not due to death of the virus. The existence of the two factors is also demonstrated by centrifuging and filtration experiments. Cultivation of the virus *in vitro* was also successfully carried out, a fragment of chick embryo (12 to 16 days old) being added to the rabbit serum, KCl broth, and inoculated with a loopful of the primary culture. The subculture was incubated anaerobically at 35°-36°. Protocols are given showing growth with fifth subculture of virus on addition of sand filtrate, which makes certain that growth must have taken place, as the original inoculum had been diluted some 10<sup>15</sup> (or a thousand billion) times. A re-examination of the "filterability" of mammalian tumours showed that mouse sarcoma is not a filterable virus in the sense attached to Rous chicken sarcoma, but experiments proved that the latter is not in reality exceptional, but differs in its accessory chemical factor, being either more abundant or more stable. The presence of an extrinsic factor or accessory factor in three other mammalian sarcoma was proved by substituting the virus of one of these tumours for that of Rous sarcoma, the growth induced in chickens being not distinguishable histologically or biologically from Rous sarcoma, even though it result from the combination of rat virus with specific factor of chicken, etc. Of tests with three human tumours only one was successful, but this breast carcinoma induced a typical Rous sarcoma. The common factor of the four mouse, rat, and human tumours tested is thus almost certainly a virus which alone cannot bring about the malignant transformation of a cell, but requires an adjuvant which is abundant in chicken sarcoma. This adjuvant is called a specific factor, and differs from an "aggressin" as the specificity in the latter depends upon the microbe. The experimental methods and their extensions provide a means for classifying the viruses, for investigating the nature of the specific factor, and for testing suspected "irritants" such as preservatives in foods, which may play a rôle in the genesis of a cancerous growth.

### INDUSTRIAL CHEMISTRY

**Lacquers, Varnishes and Dopes and Solvents** therefore are the subject of three interesting communications to industrial chemical journals at home and abroad. D. B. Keyes ("Industrial and Engineering Chemistry," June, p. 558) states that modern automobile lacquers must "go on and stand up" like a lacquer, but look like a film of oil varnish. The film-forming constituent is low viscosity nitrocellulose; resin supplies the lacquer-like properties of hard resins, such as kauri and congo, producing the tough films desired when the resin is present in appreciable amounts. The solvent must dissolve both nitrocellulose and resin, evaporate quickly at first and slowly at the end, and at the same time give

## The Progress of Pharmacy and Allied Sciences

a good flow. A general formula given for such a lacquer in which any of the softer resins may be used is as follows:—

Solids 15 to 25% by weight	{	Nitrocellulose (low viscosity)	40 to 66% of solids
		Resin (ester gum)	.. .. 20 to 30% of solids
		Plasticiser and softener (amyl phthalate)	.. .. 50 to 60% of nitrocellulose
		Pigment	.. .. 5 to 25% of solids
Liquids 75 to 85% by weight	{	Low boilers (anhydrous ethyl alcohol and anhydrous ethyl acetate)	.. .. 10 to 25% of liquids
		Medium boilers (diethyl carbonate)	.. .. 20 to 45% of liquids
		High boilers (ethyl lactate)	4 to 10% of liquids
		Diluents (toluene)	.. .. 35 to 45% of liquids

Diethyl carbonate is a new solvent now made synthetically on a large scale, and is an excellent solvent, and has the important advantage of blending certain resin solutions (kauri, shellac, elemi, thus, and rosin) with nitrocellulose without the aid of medium boiling alcohol, as with butyl acetate. Ethyl lactate is a good gloss producer, and is the solvent nearest the ideal in its class, being the strongest of common solvents for nitrocelluloses. It acts as a blending agent for resin and nitrocellulose, as it dissolves practically completely rosin, ester gum, shellac, kauri, and pontianac (but not dammar or congo). For the less soluble hard resins, the total solids in the lacquer are nearer 15 per cent. and the resin one-fourth instead of one-half the nitrocellulose. Plasticiser and low-boiling solvent are increased (the latter to 30 or 40 per cent.), and medium boilers decreased (to 15 to 20 per cent.), and amyl alcohol is included therein. For kauri ethyl lactate may be used, but if congo be employed an alcoholic solvent is required. The author states that there is a big field for such lacquers. Aero-plane dopes are dealt with by M. Deschiens in "Chemistry and Industry" for September 11. Modern dopes include (1) Plastic materials; (2) high-boiling solvents; (3) low-boiling solvents; (4) diluents; (5) plastifiers (in pigmented dopes only). Dopes are applied in four coats, first a colourless dope (containing 5 per cent. cellulose acetate), then two coats of pigmented dope, and finally a clear finishing or smoothing dope (10 per cent. cellulose acetate). A fairly common formula for dope is:—

		By weight
Low boiling solvents	{ Cellulose acetate	.. .. 80
	{ Acetone (or methyl acetate or ethyl formate)	.. .. 600
Diluents	{ Alcohol	.. .. 100
	{ Benzene	.. .. 120
High boiling solvents and plastifiers	{ Benzyl alcohol	.. .. 40
	{ Triacetin	.. .. 20
	{ Eugenol or oil of cloves	.. .. 20
Pigments	{ Aluminium powder (or powdered pigments)	.. .. 20

F. E. Bartell and M. Van Loo ("Industrial and Engineering Chemistry," September, p. 603) give micro-photographs of hexagonal cell structures caused by vortex ring action during the evaporation of volatile constituents of pigmented varnish. To form a film without structure a subsequent or secondary flow is necessary. The composition of the solvent must be such that the film will have sufficient fluidity to flow after the more volatile components have evaporated, but only long enough to eliminate the open spaces in the film.

### PURE CHEMISTRY AND PHYSICS

**Nervon.**—By means of successive fractionated extractions with acetone, ether and petroleum ether, E. Klenk ("Chemiker-Zeitung," July 7, 1925) succeeded in isolating from twenty human brains 7 grams of crude nervon, which on purification yielded 0.5 gram of pure substance. This new cerebroside was found to possess the constitution  $C_{41}H_{80}O_8N$ ; on hydrolysis it yields nervonic acid ( $C_{41}H_{80}O_2$ ), sphingosin ( $C_{17}H_{35}O_2N$ ) and galactose. Nervonic acid is an unsaturated acid, melting at 41°.

**Copper-Quinine Compounds.**—On shaking a solution of quinine (base) in chloroform with an ammoniacal solution of copper oxide, F. Erben ("Berichte der Deutschen Chemischen Gesellschaft," Vol. 58, p. 468) succeeded in obtaining complex compounds of quinine and copper hydroxide, for which he proposes the name of "cuprichine." These compounds contain one molecule of copper to four or more molecules of quinine; they form salts with hydrochloric acid, which are readily soluble in water.

**Transmutation of Mercury into Gold.**—H. Nagaoka, in a preliminary note on the transmutation of mercury ("Nature," July 18), states that a discharge was conducted in paraffin oil with iron and purified mercury as electrodes for about four hours, maintaining a potential difference of about  $15 \times 10^4$  volts cm. The mercury and oil was mixed to a black pasty mass, in which gold was pressed on testing to make cassius purple. The formation of ruby glass was effected by heating small pieces of glass with the carbon. These show under the microscope the colours characteristic of gold colloids, and a photograph is reproduced showing distribution of gold particles under a magnification of 2,500.

**Internal Pressures Produced by Chemical Affinity.**—Theodore W. Richards ("Journal of the American Chemical Society," March, 1925, p. 731) gives the following provisional estimates of the enormous internal pressures of typical substances calculated from their co-efficient of expansion:—

	Density	Cubic Co-efficient of expansion at 20°.	Average Internal Pressure in Megabars
Bromine	.. 3.120	0.00112	2,900
Ethyl ether	.. 0.717	0.00166	7,080
Ethyl alcohol	.. 0.7895	0.00102	12,600
Xylene	.. 0.8811	0.000973	12,900
Mercury	.. 13.546	0.000181	31,000
Potassium chloride	1.987	0.0001121	38,900
Silver	.. 10.5	0.0000556	145,000
Magnesium oxide	3.65	0.0000279	539,000
Tungsten	.. 19.10	0.0000137	632,000

**Magnetism.**—Professor C. G. Darwin explained modern views on magnetism in a discourse delivered at the Royal Institution on May 1 as a preliminary to describing recent developments on the theory of magnetism. The working unit is a magnetic di-pole, and it is imagined that each molecule in a bar magnet has north and south poles arranged end to end. The measure of magnetism is the magnetic moment or the product of pole strength into the length, the moment of the whole bar being the sum of the moments of its molecules. Under the influence of a magnet all bodies become magnetic, but there are three distinct types of behaviour. Attraction of north by south pole occurs strongly between with *ferro-magnetic* iron and nickel, but only feebly (a hundredth millionth less), or *para-magnetic* with many others. In *dia-magnetism* a north pole generates a feeble north pole repulsion instead of attraction, as with the other two forms of magnetism. In each atom the circulation of an electric current causes its magnetic moment. In dia-magnetism the atom behaves like a frictionless conductor in a magnetic field by inducing currents, which *prevent* and oppose the external field. In para-magnetic gases the atom is supposed to possess a magnetic moment of its own, and is a little susceptible magnet that would swing to and fro in the presence of an external field. Recent developments have complicated current conceptions, for Glaser's recent experiments show that the inherent dia-magnetism of an atom is not constant, as theory requires, but suddenly increases to three times its value at low pressures. Also, Gerlach and Stern find that silver atoms (which are para-magnetic), when distilled *in vacuo*, point either straight towards or straight away from the magnetic field, whereas the idea that para-magnetism is due to collisions would permit all orientations. Hence surprising new developments in physical theory are to be expected.

## The Progress of Pharmacy and Allied Sciences

### DENTISTRY

**Tooth Salt.**—Under the title "Sal Dentifricium" a mixture of oil of peppermint, 1 gram; sodium chloride, 2 grams; and sodium bicarbonate, 97 grams, has been included in the new Swedish Pharmacopœia.

**Tooth Paste.**—The following preparation is included in the tenth edition of the Swedish Pharmacopœia:—

Calcium carbonate	.. .. .	55 grams
Hard soap	.. .. .	10 grams
Sodium bicarbonate	.. .. .	5 grams
Oil of peppermint	.. .. .	2 grams
Oil of anise	.. .. .	0.25 gram
Thymol	.. .. .	0.1 gram

Mix with sufficient glycerin, about 25 to 35 grams, according to the nature of the calcium carbonate.

**Tooth Brushes.**—C. Pincus ("Australian Journal of Dentistry," 1925, p. 150) states that in order to keep tooth brushes in a condition in which they will be efficient tooth cleansing appliances, observance of the following rules is recommended: (1) Always purchase brushes marked "hard"; (2) always have two brushes in commission at the same time, using one for mornings only and the other for evenings only. Thus each brush has a drying period of twenty-four hours. One brush should be marked "N"; (3) buy a new brush every two weeks. Thus a brush is never kept more than a month. The new brush should always be used for the evening cleaning of the teeth, and at the end of the second week it should be transferred to the morning cleaning, the "N" being changed to "M."

**Ultra-violet Radiations in Dentistry.**—A. E. Rowlett and I. S. Spain ("British Dental Journal," 1925, p. 971) point out that there are two ways of using ultra-violet radiation therapy; it may be used generally, in which case it is probable that the longer and more penetrating radiations are the chief therapeutic factor, or it may be used locally, in which case the shorter and bactericidal radiations are chiefly concerned. That does not mean that local reactions cannot be obtained with the type of lamp producing the longer wavelengths such as the medicated carbon arc, or that there is no secondary reaction with the mercury arc. If, however, a strong local reaction is desired, it may, in the authors' experience, be obtained more rapidly and economically and localised exactly by a quartz applicator on a mercury arc than by a tungsten or carbon arc. Great claims are being made for the ultra-violet lamp in dentistry, but at present ultra-violet radiation as a dental therapeutic measure is still *sub judice*. The authors used almost exclusively Schall's lamp, which is a carbon arc, 6 amperes 60 volts, alternating type. They have also experimented with a tungsten arc, 100 volts 4 amperes direct current, and a Kromayer mercury arc, 100 volts direct current. Particulars are given of eight cases treated in this manner, but the authors consider that at present it is advisable to proceed with caution and to use the medicated carbon arc, which is perfectly safe. So far it can only be said that ultra-violet radiation in dentistry has undoubted value, but in its present form is not the specific treatment for all diseases of the periodontal membrane that had been hoped.

**Extractions During Pregnancy.**—McKim Thomas ("Dental Journal," 1925, p. 639), in a paper on the care of the teeth in nursing and expectant mothers, states that as a working rule extractions can be safely carried out up to the end of the sixth month, but in cases of acute suppuration it is justifiable to do extractions right up to the last; in some cases the effects of bearing the extraction may have a harmful effect on the mother and the fetus. The important thing is to avoid shock. In the early months of pregnancy there is a possibility of bringing on abortion and miscarriage, but if the anæsthetic is carefully given, and there is no struggling or jactation on the part of the patient, the chances of such a complication arising are very few. Chloroform, when there are numerous teeth to be removed, is quite satisfactory, but for the following reasons is better avoided: (1) It is generally a more dangerous anæsthetic; (2) the

chances of the patient struggling during induction are greater; (3) post-anæsthetic vomiting is more common. In the hands of really skilled anæsthetists there appears to be no objection to its use, but otherwise nitrous oxide is preferable, or locals in selected cases. Nitrous oxide works quite satisfactorily in these cases, and the expectant mother seems to take it very well and remain under longer than otherwise. During pregnancy, particularly in the later stages, the patient sometimes suffers with ulcerative stomatitis. The disease usually commences at the free margins of the gums as an acute necrotic inflammation, which rapidly spreads to the buccal sulcus, usually associated with a general malaise and gastric disturbance. On attention to the general health and the application of local measures the condition quickly improves.

### ESSENTIAL OILS

**Mentha Mirennæ.**—F. Bruno ("Rivista Italiana delle Essenze e Profumi," June 15, 1925) reports on the results of an experimental cultivation, in the Royal Colonial Garden in Palermo, of *Mentha Mirennæ*, a new variety of peppermint found at Lutra on the island of Tino, in the Grecian archipelago. The essential oil distilled from the leaves possessed the following characters:—Specific gravity, 0.8693; optical rotation,  $-14.75^\circ$ ; refractive index, 1.4623; acid number, 4.7; saponification number, 60; esters (calculated as linalyl acetate), 21 per cent.; total alcohols, 55.96 per cent.; total menthol, 13.78; total linalol, 42.13; solubility in alcohol (65 per cent.), 1 in 3; saponification number of the acetylated oil, 93.73. Colour: Straw yellow.

**Chaulmoogra Oil Constituents.**—T. Hashimoto ("Journal of the American Chemical Society," September, Vol. 47, No. 9, p. 2,325) has isolated several new substances from chaulmoogra oil by vacuum distillation of the last 10 to 15 per cent. of the ethyl esters of the fatty acids of the oil from the seeds of *Taraktogenus Kurzii*. These include: Taraktogenic acid  $C_{26}H_{50}O_8$  (m.p.  $113.5^\circ$  and iodine number 42.51); isogadoleic acid  $C_{26}H_{48}O_2$  (m.p.  $65.5$  to  $66^\circ$ ), a new acid (possibly arachidic acid), and a lactone substance,  $C_{18}H_{32}O_2$ . Two other unidentified solids (probably acids) were also obtained. The presence of chaulmoogric and hydnocarpic acids, and these only, is confirmed in the lighter fractions of the esters of the non-volatile acids.

**Some Indian Grass Oils.**—Rao, Sudborough and Watson ("Journal of the Indian Institute of Science," 1925, 8A, X, 143) have examined the Indian oils known as Botha grass and Bode grass oils. The Botha grass is found just beyond the Mysore border in the North Arcot district of the Madras Presidency. The oil from this grass has an odour very similar to that of the oil known as Inchi grass oil from Travancore. Bode grass is found in Mysore, and yields a very similar essential oil. Botha grass oil contains more esters than Inchi grass, as does Bode grass oil. The identity of these grasses is not yet settled. The oils gave the following figures:—

	Botha grass	Bode grass
Specific gravity	0.9038	0.9231
Refractive index at $25^\circ$	1.4748	1.4831
Rotation	$+39.3^\circ$	$-24.7^\circ$
Acid value	—	1.3
Saponification value	44.7	45.5
Sap. value (after acetylation)	120.7	112.7
Total alcohols as geraniol	36.5%	34.4%

**Kachi-Grass Oil.**—Rao and Sudborough ("Journal of the Indian Institute of Science," 8A, ii, 9) have examined the essential oil distilled from a grass growing around Bangalore, and generally on the Mysore plateau. It is known as kachi grass, and has a marked aromatic odour. It is *Cymbopogon caesioides*, a species closely allied to, but distinct from, *Cymbopogon Martini*. Although small quantities of kachi grass are distilled locally, no attempt has been made to cultivate it on an industrial scale like the closely allied grasses of India. The grass in its natural state yields from 0.14 per cent. to 1.33 per cent. of oil, according to the part of the grass distilled, the flower heads yielding the high percentages and the

## The Progress of Pharmacy and Allied Sciences

whole grass the lower percentages of oil. The oils distilled from the whole grass, the stalks and leaves and the flower heads were found to have the following characters:—

	Whole grass	Stalks and leaves	Flower heads
Specific gravity	0.926—0.937	0.935—0.949	0.918—0.977
Refractive index at 25°	1.4846—1.4867	1.4555—1.4907	1.4834—1.4875
Rotation	−18° to −45°	−31° to −39°	+2.7° to −62°
Acid value	0.9—2.5	3.4—4.9	0.5—9.2
Sap. value	13—24	21—25	12—32
Sap. value (after acetylation)	150—164	149—164	114—171
Total alcohols%	46—51	45—51	34—54

Geraniol is the principal alcoholic constituent of the oil, but perillal alcohol was also isolated. The terpenes consisted mainly of dipentene and lävlimonene. The oil, therefore, closely resembles gingergrass oil. As in the case of this oil, kachi-grass oil occurs in both the soluble and the insoluble forms. By removing some of the terpenes the insoluble oil becomes soluble and, naturally, of higher value. Apparently there is no reason why this grass should not be distilled on a commercial scale for perfumery purposes.

**Indian Cardamom Oil.**—Oil of cardamoms distilled in India is now a regular article of commerce in this country. Sudborough and his pupils have made a critical examination of the oil and its origin ("Journal of the Indian Institute of Science," 1925, 8A, X, 143). The variety of cardamoms which is largely cultivated is *Elettaria cardamomum*, Maton (var.  $\alpha$ -minor). There are two principal forms of this, known in the trade as Mysore and Malabar. The latter are smaller than the former, and there is a greater proportion of seed to pericarp in them. Both the Mysore and the Malabars are cultivated in Ceylon. *E. cardamomum* (var.  $\beta$ -) was at one time considered to be a separate species, but is now recognised as a variety only. The chief value of this work lies in the examination of a number of samples of authentic origin, distilled on the spot, so that the figures obtained are of the highest value. The following table gives the principal figures obtained:—

	Specific gravity	Refractive index at 25°	Rotation	Sap. value
1 ..	0.933	1.4613	+44°	120.6
2 ..	0.928	1.4603	+17.6°	—
3 ..	0.926	1.4620	+15.1°	96.5
4 ..	0.931	1.4608	+17.5°	—
5 ..	—	—	+28.1°	—
6 ..	—	—	+29.6°	—
7 ..	—	—	+30.2°	—

**Oil of Cyperus Rotundus.**—Sudborough and his pupils ("Journal of the Indian Institute of Science," 8A, iv, 39) have examined the essential oil of *Cyperus Rotundus*, one of the sedges growing freely in India. Although no less than sixty different species of *Cyperaceæ* occur in India, none of their essential oils appear to have been examined. The dry tuber of this particular sedge is aromatic, and is to some extent a commercial article. The odour resembles that of the sweet flag, which is used in flavouring lager beer. The chief uses to which the plant has hitherto been put are medicinal, and for perfumery, especially in the preparation of the fragrant sticks known as "qodabatties." The dry tubers yield from 0.5 to 0.85 per cent. of essential oil, six samples having the following characters:—

	1	2	3	4	5	6
Specific gravity	0.957	0.991	0.991	0.986	0.988	0.893
Rotation	−20°	+42.8°	+42.8°	+33°	+33.7°	+20.1°
Refractive index at 25°	1.4967	1.5140	1.5140	1.5156	1.5140	1.5126
Acid value	1	2.1	2.1	2.1	3.4	2.4
Sap. value	6.6	11.7	11.7	11.7	12.7	16.1
Sap. value (after acetylation)	105	97	98	66.5	82.5	72.8

The sample No. 1 was of Soudanese origin, and it is apparent that the Indian samples (2 to 6) differ materially from this sample. The lower fractions were found to contain at least two sesquiterpenes having a molecular refraction of 65.5. Two, or possibly more, alcohols are present, which, calculated as sesquiterpene alcohols, amount to about 30 per cent. of the oil. As

these alcohols do not react with phthalic anhydride they are probably tertiary. No constituent of the oil has, so far, been isolated in a state of purity.

### FIXED OILS AND FATS

**Neutral Olive Oil.**—The purified and sterilised olive oil of the French Codex of 1908, prepared by treating the oil with alcohol (95 per cent.), is now replaced by the following preparation (Supplement 1925): Determine the amount of fatty acids in the oil; for this purpose neutralise exactly, with N/10 solution of potassium hydroxide, a mixture of 25 c.c. of chloroform and 50 c.c. of alcohol (95 per cent.), to which 1 c.c. of solution of phenolphthalein has been added, until the pink coloration persists for 10 seconds. To the neutral mixture add 10 grams of olive oil, and sufficient N/10 solution of potassium hydroxide to cause the pink coloration to persist for 10 seconds. If  $n$  is the number of c.c. required, the amount of oleic acid present in 1,000 grams of olive oil is  $=2.82 n$ . To determine the exact amount of pure crystallised sodium carbonate to be employed, multiply the ascertained total weight of the oleic acid present in the oil to be treated by the factor 1.014. Reduce the sodium carbonate to a powder and dissolve it in one-tenth of its weight of distilled water at 40°. Add this solution gradually to the oil, warmed to 40°, vigorously shaking the mixture. Set aside for twenty-four hours, decant and filter. The resulting olive oil should be practically neutral; in any case its acidity, calculated as oleic acid, should not exceed 0.3 gram per 1,000 grams.

### MATERIA MEDICA

**Adrenalin.**—The Supplement of 1925 substitutes a new monograph for the one included in the French Codex of 1908 on adrenalin, which now defines the official substance as "levogyrate adrenalin, whether it be obtained from suprarenal glands or by resolution of the racemic product prepared synthetically." The specific rotation of a 1 per cent. solution in N/10 sulphuric acid at 20° is  $-53.3^\circ$ . When tested, the melting-point on the Maquenne block should not be below 250° (exact melting-point, 263°), and measured by progressive heating in a capillary tube, 200° (exactly 210°–212°). Its optical rotation should not be less than  $-50^\circ$ .

**Khesari.**—The seeds of khesari (*Lathyrus sativus* L.) have been found by I. L. A. P. Anderson, A. Howard and J. L. Simonsen ("Indian Journal of Medical Research," April, 1925) to be free from substances of an alkaloidal nature. An examination of the weeds which contaminate khesari has proved that akta (*Vicia sativa*, L. var. *angustifolia*) contains bases showing alkaloidal properties. Two such bases, vicine and divicine, and a cyanogenetic glucoside vicianin, have been isolated, prepared in the pure state, and used in inoculation experiments on animals. Divicine, which occurs in akta in combination with a sugar as the glucoside vicine, produces, on inoculation in guinea-pigs, a characteristic and fatal disease. Akta, when fed to ducks, causes death. In monkeys, it produces a very characteristic train of symptoms affecting the nervous and muscular systems. Though certain of the symptoms occurring in monkeys fed on diets containing akta have been described in cases of human lathyrism, it is not yet possible to state, in the absence of pathologic proof, that akta is the cause of lathyrism in man.

**Wormseed Adulteration.**—R. A. Feldhoff ("Pharmazeutische Zeitung," May 20, 1925) reports that he has frequently had occasion to analyse samples of wormseed claimed to have a content of about 1.5 per cent. of santonin, but which on examination failed to yield even traces of this principle. In one case the drug, carefully packed in leather bags containing 30 kilos and each again enclosed in a jute sack, was found to consist of a mixture of plant parts, chiefly flower heads, apparently derived from a variety of *Artemisia*, but smaller than the genuine species and yellow in colour, and an investigation of another consignment, amounting to six tons, yielded the same result. To ascertain whether the drug

## The Progress of Pharmacy and Allied Sciences

submitted for examination consists of genuine wormseed the author adopts the following qualitative test for the presence of santonin: Alcoholic solution of potassium hydroxide is added to the powdered drug; in the presence of genuine wormseed a deep red colour develops on gently heating the mixture, whereas if no santonin is present, the potassium hydroxide solution assumes a yellowish or greenish-yellow coloration.

### MEDICINE

**Pyramidon in Hiccup.**—In a case of hiccup consequent on an attack of influenza and which persisted for several days, W. Vogel ("Münchener medizinische Wochenschrift," 1925, p. 117) obtained a cessation of the trouble by the administration of three doses of 0.3 gram of pyramidon at intervals of about one hour. This treatment also proved successful in other cases of hiccup.

**Treatment of Hæmorrhoids.**—I. Calvo's ("Revista de Medicina y Cirurgia," March 25, 1925) experience in twenty-two cases has confirmed the advantages of the method of obliteration of hæmorrhoids by injection at the base of each of from 0.5 to 2 or even 3 c.c. of a 5 per cent. solution of urea and quinine hydrochloride. Five or six injections at a week's interval form the extreme course. No special preoperative nor postoperative measures are needed.

**Treatment of Migraine.**—When migraine is attributable to angiospastic conditions, F. W. Stein ("Klinische Wochenschrift," p. 1622, 1925) has obtained a definite cure from the intravenous administration of doses of 0.04 gram of papaverine, three times a week. These injections should be given, with intervals, for several weeks, gradually increasing the intervals between each administration. At the same time the following powder should be prescribed:—

Sodium nitrate,			
Papaverine hydrochloride .. ..	aa.	0.04 gram	
Luminal .. ..	..	0.025 gram	
Sodium bicarbonate .. ..	..	0.25 gram	

For one powder; four powders to be taken daily.

**Tetrachlorethylene as an Anthelmintic.**—M. C. Hall and J. E. Shillinger ("American Journal of Tropical Medicine," May, 1925) assert that tetrachlorethylene is apparently as effective as carbon tetrachloride and may be slightly more effective. The indicated dose for man would not be over 3 c.c. and might be as little as 2 c.c. for the removal of hookworms. It would be about as effective in removing ascarides from dogs as is carbon tetrachloride, and would probably show the same inferiority to chenopodium for the removal of ascarides from man. Presumably the same combinations with chenopodium would be effective in mixed infections with hookworms and ascarides in man. The safety of the drug would probably be very close to that of carbon tetrachloride, and the drug would probably produce the same lesions, and would have the same contraindications.

**Gastric Flatulence.**—In a paper on the treatment of flatulence ("Lancet," II, 1925, p. 345) T. L. Hardy states: It will be well to emphasise that flatulence with very few exceptions is a symptom resulting from the habit of aerophagy or air swallowing, and that the fermentation theory, apart from rare instances, is a legacy of obsolete conceptions and has little more than historical interest to recommend it. Aerophagy is the cause; flatulence and eructations are its manifestations. For the immediate relief of distension small doses of the carminative oils are useful, of which the following is an example:—

Tinct. zingib. forl .. ..	10 min.
Olei cinnamomi .. ..	1 min.
Olei carui .. ..	1 min.
Olei cajuputi .. ..	1 min.

Dose, 2–5 drops.

Oil of turpentine, 10–15 drops on a lump of sugar or in a capsule, is also of value, and a teaspoonful of powdered charcoal after meals is another well-tried remedy.

**Yatren in Amœbic Dysentery.**—P. H. Manson-Bahr and R. M. Morris ("Lancet," II, 1925, 544) describe the results obtained in the treatment of amœbic dysentery by means of yatren. Yatren ( $C_8H_8O_2SN$ ) is a combination of iodine with oxyquinoline-sulphonic acid with the addition of 20 per cent. sodium bicarbonate. The iodine is so firmly combined that it is not given off on boiling nor split off within the body of man, hence it cannot produce iodism. For ten years yatren has been in use in Germany and Holland as a wound antiseptic and tissue stimulant. The authors conclude that yatren is of definite therapeutic value in the treatment of amœbic dysentery. The cases are limited in number, but were all very typical examples of the disease. The results have been most gratifying and are apparently permanent. From the patient's point of view yatren therapy is more pleasant than any yet evolved, the toxic effect being almost negligible, and there being no necessity to restrict the patient's diet unduly.

**Therapeutic Properties of Stovarsol.**—C. Levaditi ("Lancet," II, 1925, 593) reviews the applications of stovarsol (acetylaminophenylarsinic acid, "190") from its introduction in 1922 to date. By means of this product an arsenic acid derivative was first introduced into the therapy of syphilis for administration per os. The author points out that, starting with a study of the prophylaxis of syphilis by way of the mouth, the field of action of stovarsol has become, in a very few years, greatly enlarged. One after the other, the treatment of syphilis, of yaws, of spirillary infections in general, of amœboid dysentery, of intestinal lamblasis, of the blastocystic diarrhoeas, and, very probably, of malaria also, have benefited by this new arsenic compound, or rather by this new method of treatment per os. The efficacy of the method, its exceeding simplicity, and the security which it gives in a multitude of circumstances render it worthy of attention. P. H. Manson-Bahr and R. M. Morris ("Lancet," II, 1925, 545), who describe the treatment of cases with stovarsol, regard it as an adjuvant of considerable value in the treatment of amœbiasis. They have no evidence that it acts as a direct amœbicide, but it has a definite therapeutic value in the chronic stage of the disease, and may be recommended in cases resistant to or intolerant to emetine and its compounds.

**Drugs Used in Intestinal Flatulence.**—T. L. Hardy has described a routine treatment for intestinal flatulence ("Lancet," II, 1925, p. 395). In addition to regulation of the diet, which is fully outlined, the author states that drugs are administered with three objects, to aid digestion, to control bacterial decomposition, and to relieve flatulence. In cases associated with achylia hydrochloric acid should be given in full doses, not less than 1 drachm of dilute acid in a tumbler of water flavoured with orange being sipped during and for a short time after each meal. In pancreatic deficiency various preparations such as pancreon, holadin, and taka-diastase may be tried after meals, but are not very satisfactory. Intestinal antiseptics for the control of putrefaction and fermentation are legion, but the evidence of their value is somewhat unconvincing as a satisfactory clinical assay is well-nigh impossible. The best appear to be calomel, especially in divided doses, benzonaphthol (10 to 15 gr. t.i.d. in tabloid or in cachet), and dimol (2 to 4 gr. t.i.d. after meals). Colloidal kaolin is an efficient absorbent of bacterial toxins and may be given in half-ounce doses in water t.i.d. For the immediate relief of flatulence the essential oils are distinctly valuable, the best perhaps being oil of cajuput (minims 2 on a lump of sugar) and oil of turpentine (minims 15 in capsules or cachets). A tablespoonful of charcoal taken once or twice daily is also useful and helps to render the flatulodourless.

**Sanocrysin in Phthisis.**—Knud Faber ("Lancet," II, 1925, p. 62) gives further details of the use of sanocrysin since its use was freed from the dangers which may accompany the treatment. (*C. & D.*, June 20, p. 889.) In a certain number of cases the favourable effects were striking, in others it was more doubtful, and in some it

## *The Progress of Pharmacy and Allied Sciences*

could not be detected. The cases best suitable for treatment with sanocrysin seem to be those where the infection of tuberculosis has appeared in the course of the last year. In reality in 65 per cent. of such cases good results have been observed, and all the really cured cases belong to this group. Much more uncertain are the results in the very frequent cases of older and extensive disease. He indicates the following preliminary conclusions:—Sanocrysin has a specific curative action on tuberculosis of the lungs, but it does not seem to have the same effect on extrathoracic localised tuberculosis (surgical tuberculosis, meningitis, etc.). It is very effective on fresh tuberculosis of the lungs that has been manifest less than one year. In older cases the effect of the treatment is uncertain. It is difficult to use it in febrile cases, but some good results may be obtained in old cases of apyretic fibrous phthisis. So far it has not been able to cure acute lobar tuberculous pneumonia. In ordinary cases a treatment lasts three to four months. Generally the dangers may be avoided when the treatment is carried out in the right manner and with caution. The antitoxic serum has a curative effect on acute shock. Its effect in preventing albuminuria is not clear, and further investigations are necessary.

**Prevention of Tuberculosis in Children.**—After many years of laboratory research, Professor Calmette came to the conclusion that acquired immunity to tuberculosis could only be reached by vaccinating with a living virus, deprived of its capacity for producing the disease, tuberculosis, by some device of the laboratory, such as that used by Pasteur in the preparation of his anthrax vaccine ("British Medical Journal," II, 1925, 388). This living, yet non-tuberculo-genic, virus ought to have the quality of being non-poisonous to susceptible animals, and yet have the capacity of protecting animals not hitherto exposed to the tubercle infection. The communication he and certain colleagues made to the Académie de Médecine on June 16 encourages a hope that the objective of many years' study is within sight, even if it has not already been reached. The communication was founded on the experience gained over a period of three years with a new vaccine designed to prevent the development of tuberculosis in infants born of tuberculous parents. Both in its manner of preparation and method of administration this vaccine differs from previous preparations. The original source of the vaccine he now advises was an extremely virulent strain of the bovine type of tubercle bacillus, which, after more than 230 successive cultures on an alkaline medium over a period of thirteen years, has been deprived completely and hereditarily of its capacity of initiating tuberculosis, yet the microbe remains toxic for tuberculous animals, secretes tuberculin, and provokes the formation of antibodies in the same way as a virulent tubercle bacillus. The vaccine is known in France as B.C.G. It can be given without risk by mouth, intravenously, or subcutaneously. The results so far obtained with this vaccine have been most promising. In the first six months of 1922, 178 infants born of tuberculous parents were vaccinated, and in the three years which have since elapsed not a single one of these has died of tuberculosis, though 15 have died from other causes. Some of these vaccinated children have remained in the same homes as their phthisical parents, but show no sign of the disease. Apart from tuberculosis, the general mortality of the 178 children has been 8.4 per cent., a figure considerably lower than the infant mortality of other children in France. The work is still in progress, and the vaccine is also being tested in England.

**Tissue Reactions to Ultra-Violet Radiations.**—P. R. Peacock ("Lancet," II, 1925, p. 369) states that, while on the purely physical side, the subject of ultra-violet radiation has been very thoroughly investigated, the same cannot be said of the physiological and therapeutic aspects of the subject. It is well known, for example, that exposure to the rays frequently results in bronzing of the skin, due to increase of melanin granules in the basal cells of the epidermis. This fact has been associated with a coincident improvement of bodily fitness,

and advantage has been taken of it in heliotherapy. At the same time, it is generally admitted by those who have studied a great number of cases that there are unaccountable variations in the response of different individuals to the action of the rays. Some patients pigment well and benefit greatly by treatment; some merely freckle and may not do so well; others again pigment not at all or only slightly, deriving but little benefit from the treatment, though this is by no means invariably true. If investigation is carried out with a pure beam of ultra-violet rays, instead of employing the full solar spectrum, certain effects are rendered striking which would otherwise be masked. The author goes on to indicate that fluorescence from the ultra-violet point of view must be a protective phenomenon. This is possessed by certain parts of the body and by substances such as lanolin and vaseline (yellow). The protective power of vaseline was investigated, and it was found that skin treated in this way by smearing with yellow vaseline is capable of standing three and a half times the length of exposure necessary to produce the same degree of erythema on normal skin. White vaseline is less protective than yellow, and shows less absorption spectrographically. The author concludes that since fluorescence commences directly the skin is exposed to ultra-violet rays, whereas pigmentation only occurs as a result of considerable exposure, it is logical to suppose that, in fluorescence, we have a more immediate protection from excessive radiation, as far as ultra-violet is concerned, than in pigmentation. If pigmentation of the patient is aimed at as a standard of successful treatment, this is tantamount to producing deliberately in the patient a natural and efficient protection against the very source of treatment employed. By employing the maximum dose which will on each application just fail to produce pigmentation, and, by separating the exposures by the minimum time-interval necessary to avoid the cumulative effect referred to, it should be possible to get equally good, if not better, therapeutic results in a shorter time.

**Chaulmoogra Treatment of Leprosy.**—Isabel Kerr reported recently ("Lancet," II, 1925, 373) on the use of the more recent preparations of chaulmoogra and hydnocarpus oils in the treatment of leprosy. Early in 1921 the use of the ethyl ester of the fatty acids of *Hydnocarpus wightiana* with creosote, camphor and olive oil (E.C.C.O.) was begun, being given under the skin or into the muscles. With the above preparation recent patches improved and nodules disappeared, but it was the general effect of this mixture which was most marked. It contained only a small percentage of ethyl ester. The exact composition was: Ester 1 part, camphor 1 part, creosote 1 part, olive oil  $2\frac{1}{2}$  parts, and the maximum dose, 5 c.c. Previous to its administration the inmates were dull and apathetic, few of them slept, few had any appetite, and all were lethargic. The change was very marked; sleep and appetite returned and there was a general desire to move about and share in the normal activities of life. From E.C.C.O. the author passed to more intensive treatment, giving the pure ester combined with creosote and iodine intramuscularly, and with iodine alone intravenously. In this way up to 16 c.c. could be given. The intravenous method, though more speedy in its result, was not popular with a few of the patients, since it caused a good deal of nocturnal coughing. It did so also during injection if not given very, very slowly. In some of the acute skin ("nodular") cases it was difficult to give in small enough dose to avoid aggravating the disease, but the skin cases who could take the large doses, either intravenously or intramuscularly or both, did very well. The lepra bacilli, lying as they do as emboli in the fine capillaries, can be reached through the blood-stream. In nerve cases the organisms are more difficult to reach. With them results were not so marked. However, of the reports and charts submitted to the Leprosy Research Department, Calcutta, 65 per cent. of the cases showed "very much improvement," and of these 12 per cent. had become symptom-free. The more recent method of infiltrating the skin with the ester combined with

## The Progress of Pharmacy and Allied Sciences

creosote or thymol has given the quickest results. No inconvenience beyond a burning sensation for a few minutes at the points of injection is felt, and thus the patients are very keen about it. The lesions are infiltrated with the drug and the surface painted over with trichloroacetic acid. Early cases show improvement within a few weeks; older lesions naturally need longer time. Very old nerve lesions, where the nerve-endings are dead, cannot improve. The scars may disfigure the patient, but are, of course, non-infective. Reference is also made to a control treatment carried out for two years with the esters of linseed and olive oil. This was done at the suggestion of the Calcutta leprologists. With a few cases—mostly nerve leprosy—improvement followed, but not so marked as with the chaulmoogra series. All these oils are unsaturated, but linseed and olive oils do not belong to the carbon ring series as do the latter. Leprologists say both qualities in the treatment of leprosy are needed, which is thus confirmed. Out of 180 patients treated with hydnocarpus ester during 1923 and 1924 the following statistics were drawn up: 17 per cent. symptom-free; 45 per cent. very much improved, most of them likely to become symptom-free; 35 per cent. improved; 3 per cent. worse or dead. Of infective cases 65 per cent. have become non-infective.

### PHARMACOLOGY

**Bimetal.**—This is the name given by Levaditi, Fournier and Schwartz ("Répertoire de Pharmacie," August 10, 1925) to a combination of sodium oxyaminophenyl arsinat (stovarsol) and sodio-potassium bismutho-fartrate, which occurs as a yellowish powder, insoluble in water, consisting of basic bismuth acetyloxyaminophenyl arsinat, with a content of 41 per cent. of bismuth and 15 per cent. of arsenic. It has been injected intramuscularly, in doses of 2 c.c. of an oily 10 per cent. suspension, with satisfactory results in cases of syphilis; the injections are well borne and do not give rise to any local reaction.

**Clinical Comparisons of Quinine and Quinidine.**—The Medical Research Council has issued a report (1925, Special Report No. 96) on an investigation into the action of cinchona derivatives and malaria. The conclusion arrived at is that quinidine is at least as efficacious as quinine. Further, there is no clear evidence of any difference between the two alkaloids in toxicity for the patient. These observations by a number of workers in different parts of the world are confirmatory of the earlier results published by Giemsa and Werner and other authorities. This point, therefore, of the practical equivalence of quinine and quinidine as anti-malarial agents may be regarded as definitely settled. On the other hand, the reports provide no evidence at all in favour of Acton's suggestion that the curative actions of these alkaloids are specifically different for the different kinds of malarial parasite. There is no indication whatever of a preferential action of quinidine on benign tertian or of quinine on subtertian infections. The depressant action of quinidine on heart muscle may, however, impose a limit on its use as an anti-malarial remedy. The real importance of the conclusion is that it deposes quinine from the position of unique value which practice and tradition have accorded to it among the cinchona alkaloids. The relative efficiency of quinine and quinidine in the treatment of malaria is also reported on by W. Fletcher, who found that the immediate effect of quinidine bisulphate in malaria is as good as, or slightly better than, that of quinine bisulphate.

**Allylbenzoylcegonine and Benzylbenzoylcegonine.**—E. Poulsson and G. Weidemann ("Archiv für experimentelle Pathologie und Pharmakologie," Vol. 105, Nos. 1-2, 1925) investigated the properties of two esters of ecgonine prepared by them. Allylbenzoylcegonine was obtained by heating benzoylcegonine with allyl iodide, and forms crystals, melting point 98°, almost insoluble in water, soluble in the usual organic solvents,  $[\alpha]_D^{20} = -31.0^\circ$  in absolute alcohol. The hydriodide, almost colourless crystals, has melting point 182°; the hydrochloride, melting point 176°, is very soluble in water and has

$[\alpha]_D^{20} = -37.30^\circ$  in absolute alcohol. Benzylbenzoylcegonine is an oil, insoluble in water, but easily soluble in alcohol and ether. It has  $[\alpha]_D^{20} = -27.0^\circ$  in absolute alcohol. The hydrochloride, melting point 123°, has  $[\alpha]_D^{20} = -18.5^\circ$  in absolute alcohol, and is easily soluble in water and alcohol, but almost insoluble in ether and petroleum ether. When injected intravenously into frogs, rats, and dogs, both alkaloids produce symptoms of cocaine poisoning, and the lethal dose in each case is similar to that of cocaine. The benzyl compound, however, is exceptional in its behaviour towards guinea-pigs, in that the lethal dose in this case is about three times that of cocaine. For local anaesthesia the allyl compound acts at a minimum concentration of 0.25 per cent. and is superior to cocaine; the benzyl compound is without effect at this dilution. The allyl compound does not dilate the pupil to the same extent as cocaine, anaesthesia, in the case of the application of a 5 per cent. solution to the cornea, lasting for twelve to twenty-two minutes, double that produced by cocaine.

### Differences in Action of Drugs on Animals and Man.

John Uri Lloyd ("American Journal of Pharmacy," August (p. 527) calls attention to a paper prepared at his request by Dr. Fritz Külz, of Leipzig, and which relates to the use of animals for physiological standardisation of drugs. This brings out the very different effect which drugs may have with different species of animals. Thus atoxyl frequently caused blindness in man, but no case has been recorded in animal experiments. The difference in effect is due to difference in distribution of arsenic, which varies even in cat and dog, the brain of the former containing arsenic and the latter remaining free. Carnivorous dogs are more resistant to acid poisoning than herbivorous rabbits, lessened urea formation in the latter allowing alkali reserves to be rapidly depleted. Herbivora with longer intestines are sensitive to metallic poisoning. Inunction of 30 grams of blue ointment will kill an ox, but not injure a dog. Water frogs (*Rana esculenta*) are fourteen times less sensitive to caffeine than grass frogs (*R. temporaria*), yet they are so closely allied as to produce hybrids, and the heart of the American frog (*Leptodactylus ocellatus*) is about one hundred times less sensitive to ouabain, strophanthin and digitalin than European frogs (*R. temporaria*), but no difference is found with digitalis infusion and saponin. The narcotic dose of veronal in man is only one-sixteenth that of animals, while trional, which is narcotic with humans, produces extreme excitability in cats and deep narcosis with rabbits. It is not surprising that animals unable to vomit (horses, goats, rabbits, etc.) are not affected by emetics, but apomorphine, strangely enough, is without action on frog, hog, and hedgehog, which are capable of vomiting. The hedgehog enjoys the reputation of being poison-proof, but is not quite immune, being susceptible to cantharidin. Thus one-tenth of a gram of cantharidin will kill thirty men, twenty rabbits, or one hedgehog. The sensitivity of animals to atropine is in order of decreasing effect: Man, monkey, cat, dog, rabbit, guinea-pig, rat, goat, pigeon, hog. Fertile generations of rabbits and guinea-pigs have been raised on food consisting of fresh leaves of henbane, belladonna, and stramonium in summer and dried plants and roots in winter. Thriving animals that were used to belladonna from birth rejected other food. The explanation is that the blood of rabbits has the power of destroying atropine, so that the more slowly it gets into the blood stream the less the effect. As regards morphine the lethal dose for a man (about 0.2 gram) is about one-seventieth that for dog or rabbit in proportion to body weight. Whereas man dies in deep coma, dogs, after initial sleep, suffer from sudden strychnine-like convulsions when poisoned with morphine. Horses, cattle, and especially cats, react excitably to morphine, and the pupil of the eye enlarges instead of contracting, as in man. The average toxic dose in milligrams of morphine per kilogram of body weight of animal is: Horse, 7; donkey, 9; young cattle, 15; cat, 40; dog, 65; hog, 200; goat, 400. Ergot

## The Progress of Pharmacy and Allied Sciences

preparations are believed to act uniformly as regards uterine stimulation, but the behaviour of adrenalin, which relaxes the isolated uterus of a guinea-pig but contracts this in the living animal, and the numerous failures in practice with physiologically tested preparations for parturition, show that application of results from animal to man should be accepted with great caution. Experiments on animals may lead to valuable preliminary conclusions, but the decisive word regarding practical utility must come from clinical practice.

### PHOTOGRAPHY

**Fluorescence of Photographic Developers.**—A. and L. Lumière and A. Seyewetz ("Bulletin de la Société Chimique de France," June 1925) undertook an investigation to establish whether the more generally used photographic developers possessed a specific fluorescence, enabling their recognition in solutions or mixtures, and differentiation from inactive isomers. The authors found that *p*-phenylenediamine base exhibits a deep violet fluorescence which distinguishes it from its *ortho* and *meta* isomers, which are non-fluorescent. Hydroquinone exhibits a slight violet fluorescence. Methyl-*p*-amidophenol sulphate (metol) shows a characteristic fluorescence even in alkaline solution, by which it can be distinguished from *p*-amidophenol sulphate, often used as an adulterant.

**Photographic Sensitivity.**—S. E. Sheppard ("Photographic Journal," 1925, p. 380), in Communication No. 240 from the Eastman Kodak Research Laboratory, states that it was found that the acid deliming liquors formed in manufacture of gelatin contained photographically active material. After concentration and suitable treatment the mysterious "Gelatin X" contained in photographic gelatins was isolated and identified as allyl isothiocyanate or allyl mustard oil. It is estimated that photographically active gelatins contain about one part per 1,000,000 to one part per 300,000 of this sensitising substance, which interacts with the silver halides to form nuclei of silver sulphide, the material of the "sensitivity centres." Silver selenide and telluride can function equivalently.

**Development Stain.**—J. Southworth ("British Journal of Photography," 1925, p. 379) classifies development stain as (1) general oxidation stain; (2) image stain; (3) solvent stain. He finds that when a staining pyro developer is used in conjunction with a plain hypo fixing solution, the resultant image stain is produced in two distinct stages, the first occurring during development, the second during washing. Though he has not ascertained the cause of the first stage, the second stage is due to dissolved air in the washing water and free alkali. The stain-inhibiting properties of an acid fixing solution are due principally to the neutralising of the alkali which is ordinarily present in the gelatin-film of the developed negative. The yellow stain on bromide or gaslight prints is a solvent stain or reduction stain, arising from the silver salts in the emulsion being partly dissolved by the sulphites, the silver being reduced and deposited in a colloidal state. Solvent stain on prints is essentially the same as what on negatives is termed dichroic fog. The causes being different, oxidation stains and solvent stains obey different sets of conditions.

### VETERINARY MEDICINE

**Contagious Abortion in Ewes.**—T. J. Bosworth and R. E. Glover ("Veterinary Journal," July 1925, p. 319) state that although they do not feel justified in drawing many definite conclusions from their work in its present stage, they think it is established that the organism they have isolated is a cause of abortion amongst ewes on an extensive scale. It was isolated in pure culture from several natural outbreaks and was proved to be capable of producing abortion in pregnant ewes which were artificially infected. Ewes which become infected do not all abort, but a proportion give birth to apparently normal lambs. This has been noticed not only in natural outbreaks but also in the experimental flock. The number of animals used was small, but, of the

four which proved to be pregnant, two aborted. The remaining two gave birth to living lambs, and in one of them the organism was present in the discharge from the uterus. It would, therefore, appear that the organism is liable to cause abortion in ewes exposed to a heavy infection during the period of gestation. On the other hand, infection which was incurred as a result of contact during the non-pregnant period did not result in abortion during the next pregnancy.

**Bone Meal in Wasting Diseases.**—V. P. Gokhale ("Veterinary Journal," 1925, p. 313) advocates the administering of bone meal to cattle which become emaciated from obscure causes. Cattle which were suffering in this manner were given tonic powders of sulphate of iron, nux vomica, and gentian without benefit. Later, the animals freely indulged in licking earth, had poor appetite, appeared dull, and used to grind their teeth. Examination of the blood for parasites proved negative. Liquor arsenicalis was given a trial, and as there was improvement in appetite and condition it was administered for over two months; but the old trouble started again among the treated animals, and so it was discontinued. Five cases were destroyed, and on *post-mortem* examination the only important finding was parasitic gastritis of advanced type and a large quantity of sand present in the abomasum. Solution of copper sulphate was administered to the remaining emaciated cattle. This treatment proved much more promising than the arsenic treatment, but the improvement was of short duration. It was then decided to try bone meal. Three ounces of bone meal, mixed with a pint of congee, was administered as a drench to each animal daily. Under this treatment they began to show improvement rapidly, and within less than three months they put on flesh, the grinding of teeth and habit of licking earth disappeared, and their appetite became normal. As bone meal alone proved successful, there is a strong reason to believe that the grass grown on the farm during recent years was highly deficient in phosphorus content. A note of caution is added that the bone meal should be purchased from a trustworthy source and should have been sterilised owing to the risk of anthrax.

**Distemper Research.**—The report recently issued by "The Field" Distemper Council states that one of the most difficult and lengthy processes has been the breeding of a "clean" stock of dogs, but it has been found that the disease can be proved to be the same in ferrets as in dogs, so that the use of the former has led to considerable economies. The fact that no bacterial organisms have been discovered is in agreement with the results of Carré and opposed to the conclusions of McGowan and Ferry. The organism described by these last observers has yet to be found by the Council's investigators. The scientific committee has put on record a brief but careful description of their observations on canine distemper as a disease in the dogs under their care. The period which elapses between the time when the dog is subject to infection and the onset of the symptoms of the disease is four days. The temperature rises abruptly on the fourth day to 104° F., or more, and then other symptoms make their appearance. The dog may vomit several times at this stage. There is a frequent passage of urine, respirations are increased in frequency, the animal has a hot, dry nose, and lies about in its kennel obviously feeling ill. This is the first stage. The high temperature, which is sometimes as high as 105° F., reaches normal in the course of 24 or 48 hours, and with this return to normal the dog resumes its ordinary habits almost as if nothing had happened. There may or may not be a second rise of temperature. This, when it occurs, usually commences within 24 or 48 hours of the first fall. The second fever period may be short and very few other symptoms may be present, in which case the whole disease is mild. On the other hand, the second fever period may be severe and be associated with purulent discharges from eyes and nose and sometimes broncho-pneumonia. Alimentary disturbances may also be prominent in this second stage. Recovery is slow. Sometimes the disease appears to affect the central

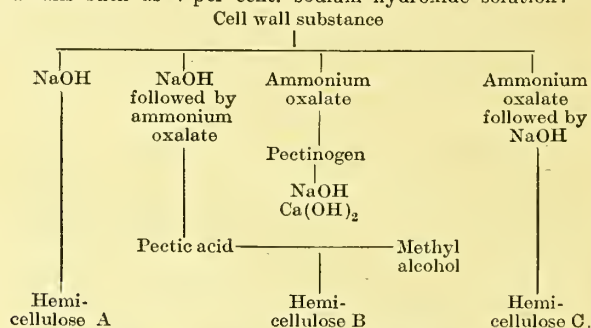
## The Progress of Pharmacy and Allied Sciences

nervous system, and grave symptoms such as chorea (twitchings and spasmodic movements) and fits occur. When fits only appear at this second stage and the animal does not present the symptoms of chorea it usually recovers. The greatest possible care should be taken not only in regard to the treatment of the dog at the first stage, but also in regard to possible spread of infection by the attendant. It is not necessary, then, for a dog to have a purulent discharge from eyes and nose, or chorea, or any other of the usually accepted symptoms of distemper, for it to be suffering from the disease and to be dangerous to other susceptible dogs.

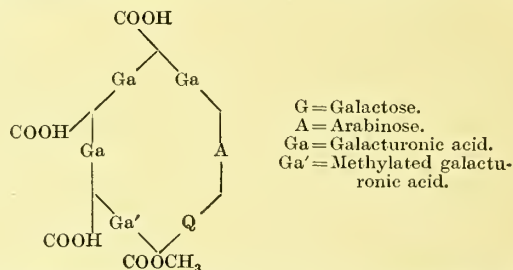
**Foot and Mouth Disease.**—The first report of the Foot and Mouth Disease Research Committee has recently been issued (H.M. Stationery Office, 1s. 3d.). The work has been carried out at the laboratory of the Ministry of Agriculture, near Weybridge and the Lister Institute. Attempts to confirm the work of Frosch and Dahman have been unsuccessful, and no support has been found for the view that the virus can be concentrated and purified by centrifugation. Investigations as to the effect of temperature on infectivity show that at 37°C. the virus was dead in 12 to 24 hours, but aphthous lymph from guinea pigs was still virulent after 190 days at 4° to 7° C., and small amounts of emulsions from the pads of the animals were virulent after 124 days at -4° C. to +35° C. In buffered phosphate solutions adjusted to a pH of 7.6, the virus was still virulent after five days at 37° C.; it is not materially affected if the oxygen is reduced; in a 0.5 per cent. solution of phenol the virulence had not completely disappeared in 41 hours at 37° C., nor in 21 days at room temperature; it can withstand the action of 60 per cent. alcohol for eighteen hours at room temperature; and can survive for forty-one hours in a saturated aqueous solution of chloroform. Ether vapour did not destroy the infectivity of the virus in thirty-six hours. In a one per cent. solution of antiformin the virus was found killed in one hour at room temperature. Experiments on the influence of drying showed that in vesicle fluid diluted and then dried the virus would survive at least a week at 37° C., and for at least fourteen days at 18° C. Guinea-pigs of different colours have been used, and though colour possesses no special significance, the weight is an important factor, the most severe reactions being obtained with animals weighing 360 to 460 grams. As in cattle, the mortality is about 5 per cent., and the recovered animals are highly resistant to a second inoculation. There is evidence that 24 to 36 hours after inoculation an emulsion of epithelium from the site of the primary aphtha will infect normal guinea-pigs in a dilution of 1 in 100,000. Apart from the infected epithelium, the actual fluid of the vesicles after dilution 1 in 50 and filtration through a bacterial filter, is frequently infective in a final dilution of 1 in 1,000,000. Even during the primary aphthous stage the virus is easily demonstrated in the blood for 24 hours after inoculation; as small a quantity as 0.05 c.c. of heart blood contains sufficient virus to infect a normal animal. Indeed, the concentration of the virus in the heart blood appears to reach an acme about the time of the maximum of the local reaction when 0.05 c.c. of blood diluted 1,600 fold has reproduced the disease. There is some evidence to show that the infectivity of the organs varies according to their blood content. The virus has, however, been demonstrated in the saliva and milk when the disease is at its height, but it is very rarely the case that an infected guinea-pig communicates the disease to another even when living in the closest contact. The researches both at the Ministry's Laboratory and the Lister Institute are in agreement that the lesions in the guinea-pig are specific. Experiments on other animals showed that rats could be infected with difficulty; white mice appeared to be immune; house mice showed a transient infectivity of the blood; field mice were fairly susceptible; and in fowls and ducks the results were negative. Attempts to transmit the disease by bugs failed, and all attempts to cause a natural spread of the disease among small animals have proved abortive.

### Miscellaneous

**Pectinogen and Pectic Acid.**—F. W. Norris and S. B. Schryner ("Biochemical Journal," Vol. XIX, No. 4, p. 676) give the following scheme for the production of products from cell wall substance by the action of alkalis such as 4 per cent. sodium hydroxide solution:—



As a working hypothesis the conception of Nanji, Paton, and Ling may be accepted, according to which the molecule may be regarded as a ring with six sides, viz. :—



The pectinogen obtained proved to vary considerably in regard to methoxyl content and with period of extraction.

**Treatment of Eczema of Ear.**—John F. O. Malley, ("Lancet," II, 1925, 143), in describing the treatment of external otitis and furunculosis of the external auditory meatus, describes the following method of treating acute recurring eczema which, he states, responds well to treatment: During the acute stage Lassar's paste (zinc oxide, pulv. amyl, lanolin and vaseline, each 2 dr.) should be applied on strips of muslin or lint (smooth side) over the pinna and in its folds and on a few inches of half-inch ribbon gauze lightly packed into the external meatus, night and morning. When the eczema has passed into the dry and scaly stage, 10 gr. of salicylic acid should be added to the ounce of Lassar's paste and applied direct to the affected area, which may be otherwise left uncovered. As eczema of the pinna is invariably accompanied by seborrhœa of the scalp, which in the opinion of some dermatologists is the starting-point of the infective ear process, the scalp should be shampooed about twice a week, taking care to protect the ear from the water or shampoo liquid used. Soap spirit (sapomollis and spirit. vini rect. 2 oz. each) acts well, but much care must be taken to remove all traces of it by repeated rinsings of water. In less acute cases of deep meatal eczema (so often the starting-point of external otitis, diffuse and furuncular) the following method gives excellent results. If there is any loose skin debris about, remove it by gentle syringing or wiping out with wool with a solution of sodium bicarbonate, 2 dr. to the pint of warm water. Dry meatus and fill with a rolled pledget of wool soaked in the following preparation: Ung. hydrarg. nitr. dil. 1 dr., liq. carbon deterg. 10 min., paraff. liq. ad 1 oz. This oily preparation should be brought, into intimate contact with the meatal lining by pressing the tragus on to the wool several times. This wool should be removed and a small dry portion placed in the external orifice only.

## Sporting Events

Playing at Neasden, in the London Business Houses League, on September 19, the football club of The British Drug Houses, Ltd., defeated Oriental Carpets Merchants by five goals to *nil*.

A football match was played at Sandeygate, on September 17, between Halifax chemists and the Sheffield Pharmacy Football Club, the latter team winning by four goals to two. Following the game, the visitors, who had journeyed from Halifax by motor, were entertained to tea in the Y.M.C.A., and welcomed to Sheffield by Mr. Preston, the President of the club. A return match was arranged.

The eighth outing of the season of the London Chemists' Golfing Society took place at the Enfield golf club on September 17. The prize presented by Arthur H. Cox & Co., Ltd., Brighton, was won by Mr. R. C. Green, and the Thomson cup was tied for by Dr. B. Yule and Mr. W. Main. The leading scores for the Cox prize were as follows:—

R. C. Green ...	86—14=72	H. Bartlett ...	83—1=82
B. Yule ...	77—4=73	A. Leith ...	97—14=83
W. Main ...	80—7=73	M. Carmichael ...	88—4=84
W. Duncan ...	93—16=77	A. Daniel ...	97—12=85
W. Attwood ...	94—16=78	J. Deas ...	103—16=87
C. Macdonald ...	85—6=79	F. C. Jones ...	102—9=93
J. Skelley ...	94—14=80		

A series of competitions has recently been held by the London Chemists' Sports Club, with the following results:—*Tennis*: In a competition for mixed doubles, in which partners were drawn for and changed after each set, as in a whist drive, fifty-four games were played, the leading scores at the conclusion being: Mrs. Swanston, 39; Mrs. Cunningham, 38; Miss Sawtell, 38; Mr. E. C. Pryce, 41; Mr. H. B. Walker, 39; Mr. W. E. Swanston, 38. In a ladies' singles on handicap terms the semi-finals were Miss A. W. Freke v. Miss Eldridge and Mrs. Swanston v. Mrs. Wells. Miss Freke and Mrs. Swanston qualified for the final, and the latter won 7—5, 6—4. *Golf*: On the occasion of the ladies' golf stroke competition, on handicap terms, rain delayed play for two hours, and good golf was out of the question. The best cards returned were: Mrs. Rae, 96; Mrs. Downing, 99; Miss D. Parker, 108. The gentlemen's golf stroke competition, on handicap terms, resulted in a tie for the first place, for which there will be a replay. The net scores for the best cards sent in were as follows: E. Alban Atkins and W. E. Cane (a tie), 72; J. E. Monaghan, 74; G. G. Gibson, 80; H. B. Walker, 84; T. Rawlins, 84; G. Coward, 87; R. Cooper, 87; W. B. Dow, 88; J. Downing, 95; J. T. Walters, 95. *Putting*: This competition for ladies was for thirty-six holes, the best cards being: Mrs. F. Perrett, 94; Mrs. Downing, 98; Mrs. Parker, 103; Miss Parker and Mrs. Walker, 104; Mrs. Rae, 105; Mrs. Collings and Mrs. Gibson, 106.

## Marriages

**BARNES—HOLMSHAW.**—At the Endowed Wesleyan Church, Ilminster, on September 14, William Henry Edward Barnes, chemist and druggist, Peterborough, to Margaret Mary Holmslaw, chemist and druggist.

**BEARD—SMITH.**—At Scarborough, recently, Paul Beard to Joyce Cass Smith, chemist and druggist.

**DAWSON—WHEWELL.**—At Burnley, on September 22, Roland Dawson, Ph.C., Burnley, to Maud Whewell.

**MAPLETHORPE—PEARCE.**—At the Newland Congregational Church, Hull, on September 21, by the Rev. J. G. Patton, Cyril Wheatley Mapletorpe, A.I.C., Ph.C., only son of Mr. Jackson Mapletorpe, Hull, to Margery Bessie, youngest daughter of Mr. F. J. Pearce, Hull.

**PATTON—McCULLOUGH.**—At Rosemary Street Presbyterian Church, Belfast, recently, Joseph Alexander Patton, Ph.C., 269 Antrim Road, to Elsie McCullough.

**ROBINSON—FROST.**—At the Congregational Church, Brampton, on September 15, Charles William Robinson, chairman and managing-director of Robinson & Sons, Ltd., Chesterfield, to Beatrice Frost, Sheffield.

**STANYON—DAMS.**—At Carrs Lane Chapel, Birmingham, on September 12, by the Rev. Leyton Richards, M.A., assisted by the Rev. Will. Stanyon, brother of the bridegroom, Herbert Stanyon, M.P.S., Ketton, to Marion Louie Dams, Birmingham.

**WILLIAMS—BARKER.**—At the Bethel Wesleyan Chapel, Brymbo, recently, John David Williams, chemist and druggist, Blaenau Festiniog, to Mabel Barker.

### Silver Wedding

**BAXTER—BLAIR.**—At the Maitland Hotel, Edinburgh, on September 21, 1900, by the Rev. T. S. Dickson, M.A., George Baxter, chemist and druggist, to Christina Chirnside, Alloa.

## Births

Notices for insertion in this column must be properly authenticated.

**ROSS.**—On September 20, the wife of William B. Ross, chemist and druggist, 529 Oldham Road, Newton Heath, Manchester, of a daughter.

## Personalities

**MR. WILLIAM TAPPENDEN**, cashier at the chief offices of Burroughs Wellcome & Co., has been presented with an inlaid mahogany clock, bearing a suitable inscription, to commemorate the completion of twenty-one years' service.

**MR. W. E. CLARKE**, chemist and druggist, Surbiton, met with an accident near Slingfield, on September 15, when motor-cycling home from Newhaven. He was conveyed to Horsham Hospital, where it was found that, among other injuries, his right leg was fractured.

**MR. HAROLD MILLER**, President of the Cheltenham and District Branch of the Pharmaceutical Society and managing director of United Chemists' Association, Ltd., was a successful candidate in the municipal by-election on September 15. In polling 1,215 votes, Mr. Miller's majority was 438.

**PERCY JOHN DYER**, son of the manager of Matthews & Wilson, Ltd., London, S.E.1, has won the Ada Lewis scholarship at the Royal Academy of Music. He was educated at Christ's Hospital, to which he won a scholarship at the age of eleven. Master Dyer, who is now seventeen, has just passed the London matriculation examination. His speciality is violin playing, and he will be heard at some first-class concerts this season. He will enter the drug trade if he does not take up music as a profession.

**MR. E. T. NEATHERCOAT**, Ph.C., ex-President of the Pharmaceutical Society of Great Britain, contributed an article on poisons, written in popular style, to the "Daily Mail" of September 24. The article ends as follows:

In the Vaquier case the regulation which enforces the registration of each purchase of strychnine furnished just that piece of evidence which, in my judgment, put the guilt of the murderer beyond doubt. Restrictive legislation here showed its value, but, important as it is to prove the purchase of poison by a murderer, it is better to have regulations which, so far as is humanly possible, put such poisons beyond his reach.

## Coming Events

This section is reserved for advance notices of meetings or other events. These should be received by Wednesday of the week before the meetings, etc., occur.

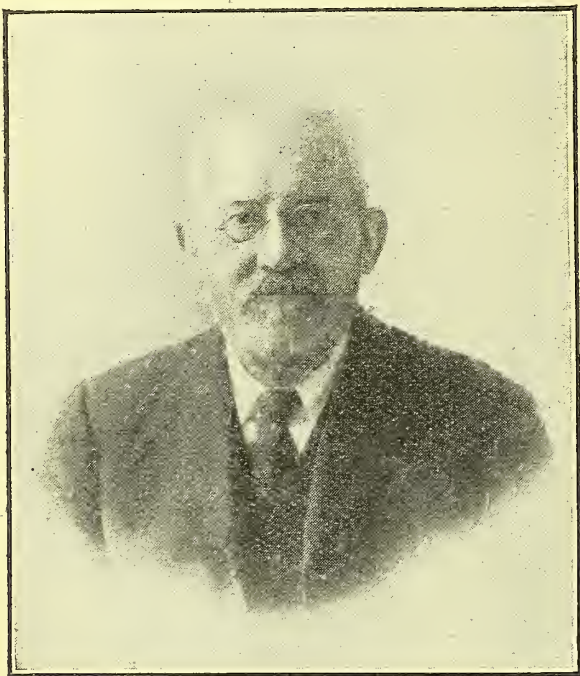
### Thursday, October 1

**Chemists' Dental Society (of Great Britain and Ireland)**, University of London (Imperial Institute), South Kensington, London, S.W.7, at 5 p.m. Special meeting. (International Dental Week.)

**London Chemists' Sports Club**, Maw's Sports Ground, New Barnet. Tennis singles competition. Gentlemen.

## Deaths

BELL.—We regret to have to announce the death at 11 Milton Park, Highgate, London, N., on September 18, of Mr. Charles Christopher Bell, chemist and druggist, aged seventy-nine years. As "Xrayser II," Mr. Bell has for the past sixteen years contributed the page of "Observations and Reflections" which appears weekly in THE CHEMIST AND DRUGGIST. The late Mr. A. C. Wootton originated this *C. & D.* feature in 1899, and continued it until he died in 1909. He was succeeded by Mr. Bell, who had been for many years previously an occasional contributor, so that we were well able to judge of his capabilities as a successor to Mr. Wootton. That he has for the long period of sixteen years maintained the reputation of the "Observations and Reflections" page, which is read with interest by thousands of chemists in all parts of the world, is in itself sufficient testimony to his exceptional abilities. To this we add our personal appreciation of his services as an ideal contributor—a concise writer who always delivered



*Yours sincerely*  
*C. C. Bell*

his "copy" promptly and never objected when the exigencies of space made it necessary to abbreviate or hold over portions of his contributions. It was no small task for a sexagenarian to begin what was in a sense a new and exacting business, that of journalism, and he sometimes laughingly referred to his "amateur" efforts, although aware of the fact that in pharmaceutical journalism practical knowledge of pharmacy is the major part of the qualification for the position.

Mr. Bell was born at Hickling, in South Nottinghamshire, on December 1, 1845, the second son of his father, a leading farmer and freeholder. As a child he was very delicate, and had several severe illnesses, so that he through life was never robust. He went to a local school kept by a Mr. Featherstone, partly as boarder and partly as a day scholar. At about fourteen he went to Wellesley College, Sheffield, where he was to have been for some years, with a view of entering the Civil Service, but within a year he had a serious breakdown in health, due to overwork, and the doctor advised withdrawal from school. He was thereupon apprenticed to his uncle, Mr. Wright, a chemist, of Myrtle Street, Liverpool. Of his

apprentice days Mr. Bell has given reminiscences from which we take the following as they throw an interesting light upon the state of the drug-trade in pre-Pharmacy Act days:

My apprenticeship dates from 1862, and it was for a term of four years, the premium paid for me being £50. In consideration of this I was to have an hour a day allowed for study and one evening per week for attendance at lectures. My master was a pharmaceutical chemist without examination, having joined the Society before 1852. His business was in the best residential quarter of one of our largest seaport towns, and many of the leading families of the place were among his regular customers. He did, however, as was then usual, a very mixed trade, but with a considerable amount of dispensing, for doctors were in those days either less greedy or less industrious than they appear to be now. He was thoroughly well up in all the practical part of the business, but made no pretence to any particular scientific knowledge, in which, again, he was like at least the more honest of his fellow "chemists." My hour of study had perforce to be spent in the shop, and was subject to interruptions by customers. As for lectures, the only things of the kind in the town were the weekly or monthly meetings (I forget which) of the local Chemists' Association, which I was at liberty to attend whenever the governor did not care to do so. There was very good coffee to be had at these meetings, and I dare say the discussions on trade questions (to say nothing of the gossip) were interesting enough to the older members, but, generally speaking, they were about as scientific as Mr. Pickwick's dissertation on the Hampstead Ponds. I did, indeed, on one occasion hear a scientific lecture there from a local F.C.S., whose science may have been unimpeachable, but whose oratory belonged to the order I have heard described as the "abstruse-cosive," and did not readily lend itself to exposition. There was, however, a library in connection with the Chemists' Association which I was allowed to use. Unfortunately most of the books were hopelessly out of date, and I had nobody to guide me in selecting from them. I gained a good deal of interesting information concerning the older school of chemists (including alchemists, for I was determined to be thorough), and almost mastered the Linnæan system of botany before I discovered that it had been superseded by the Natural Orders; but the library was of no real use to me, and I therefore temporarily relinquished my ambition to die President of the Pharmaceutical Society, and devoted my one evening per week to recreation pure and simple. Our hours of business in those days were from 8 to 10.30, or 12 on Saturdays, with Sunday duty from 6 to 9 p.m., but I had no Sunday work during my apprenticeship. My duty on weekdays was entirely in the shop, except that occasionally I had to help the errand-boy in the cellar to make blacking, furniture-polish, brass-paste, or some such preparation more or less remotely connected with pharmacy. For our trade was, as I have said, a mixed one, and the "family" department was the larger part of it. Still, we did enough dispensing to employ one pair of hands for a considerable portion of the day, and it very often happened that mine were the only pair available, which was fortunate for me. We made none of the strictly pharmaceutical preparations, except two or three of the simpler tinctures, but everything employed in medicine was ordered in strict accordance with the Pharmacopœia. But in a business where practically everything was bought ready-made, and I had no real opportunity for study, it was impossible for me to acquire much knowledge of pharmacy proper; and though I made what study I could of the Pharmacopœia, I found myself at a great disadvantage when in my next situation I had to make everything it was in any way possible to make in an ordinary pharmacy. Still, I had learnt to dispense quickly and accurately, and when my apprenticeship was over I was as well qualified for an assistant's situation as most of the young men I have in subsequent years had in my employ.

After concluding his apprenticeship Mr. Bell served as an assistant at Nottingham, London and Brighton. While in London he passed the Modified examination as a chemist and druggist in February 1869, and it was always a grievance of his that although many chemists and druggists had been admitted members of the Pharmaceutical Society he could only join that body as an associate, which he refused to do. After this experience in the retail he transferred to the wholesale business, and was for several years a traveller at Liverpool with Sumner's and Jackson's. While at Liverpool he married Rachel Hughes, daughter of John Hughes, who, after a business career at Liverpool, had retired to Llanfairfechan. His wife died in September 1880. Mr. Bell was always a martyr to indigestion, and a traveller's life, with

irregular meals, often indifferently cooked, made this worse. He therefore decided to return to the retail trade. His elder brother, John Henry Bell, who had begun as a farmer, in Derbyshire, had decided, after several bad seasons and heavy losses, to abandon farming and go into business; and in 1879 the two entered into partnership, the elder brother providing the capital and Mr. C. C. Bell the experience. They bought a business, with post office attached, at Epworth, Lincolnshire. Some ten years later Mr. J. H. Bell, having qualified and acquired the necessary business experience, and the place not affording much scope for two, the brothers dissolved partnership, the elder buying a business at Stapleford, which he carried on until his retirement in 1911. He died in 1921.

Owing to ill-health Mr. C. C. Bell retired from business about 1905, and came to live in London, where his son, Mr. H. Idris Bell, occupies an important position at the British Museum. Mr. Bell collaborated with his son in two volumes of translations from Welsh poetry, and is the author (besides many unpublished poems) of several hymns, one or two of which are to be found in the children's hymn-books of several denominations. He has not published very much apart from signed and unsigned articles in the *C. & D.*, but poems and articles of his have appeared in several periodicals, such as "The Times Literary Supplement," and the "Pharmaceutical Journal." His opinions were always received with respect, and if, as sometimes happened, there was a "bite" in the "observation" or the "reflection," the body referred to would generally acknowledge that "Xrayser II" had found out the weak spot in an argument or a scheme. This detachment from active business gave him some advantages, but all gained by his business experience which time had ripened and the wisdom which had broadened his outlook. The funeral took place at Epworth, and by his special request no flowers were to be sent.

A soul temper'd with fire, fervent, heroic and good, helper and friend of mankind.

The Editor and staff of the *C. & D.* regret the severance of a long relationship of one who as a colleague and friend has consistently upheld the reputation of the Journal for fearless but fair criticism, and for constructive suggestions tending to the betterment of pharmacy and of drug-trade conditions.

**BERTIE.**—At Strathview, Auchinblae, on September 18, Mr. Jonathan Bertie, retired chemist and druggist, aged eighty.

**BOWDEN.**—Recently, Mr. William Bowden, chemist and druggist, aged eighty-nine. Mr. Bowden traded at Patricroft and Eccles, Manchester, from 1865 to 1900, when he was succeeded by his son. Mr. Bowden was a Past-Master of the Worsley Lodge of Freemasons, a member of the Lancashire and Cheshire Antiquarian Society, and was for some years Vicar's warden of Christ Church, Patricroft.

**CROSBY.**—At Brentwood, recently, Mr. John Crosby, chemist and druggist, aged seventy-eight. Mr. Crosby was a native of Wellingore and served his apprenticeship in Lincoln. After further experience, including several years with Roberts & Co., in London, he took over the business in Brentwood, and, in spite of ill-health during recent months, had attended to it until the day before his death.

**DARWIN.**—At 10 Madingley Road, Cambridge, on September 19, Sir Francis Darwin, F.R.S., third and eldest surviving son of the late Charles Robert Darwin, aged seventy-seven. Sir Francis Darwin obtained a first class in the Natural Sciences Tripos at Cambridge in 1870. He continued his medical work at St. George's Hospital, and proceeded to the M.B. degree, but never practised medicine. Later he was elected a Fellow of Christ's College, Cambridge, and afterwards became an Honorary Fellow of the same Foundation. In 1882 he was elected a Fellow of the Royal Society, held the post of foreign secretary from 1903 to 1907, and was a Vice-President in 1907-8. He was awarded the Darwin medal in 1912. From 1884 to 1888 Sir Francis was University Lecturer at Cambridge and held the University Readership from

1888 to 1904. For some years he was responsible for the botanical part of the course in elementary biology intended primarily for medical students, and his "Elements of Botany" was designed for this course. In 1904, in collaboration with the late E. H. Acton, Darwin published a "Practical Physiology of Plants." In 1908 he became President of the British Association at the Dublin meeting, being the first botanist to occupy the Presidential chair since 1868, when it was filled by Sir Joseph Hooker. In his address Sir Francis dealt with the movement of plants and problems of stimulus and reaction. The majority of his scientific papers are concerned with phenomena connected with the plant's relation to its environment. The recipient of many scientific honours, he was an honorary doctor of science of Dublin, Liverpool, Sheffield, and Brussels, an honorary LL.D. of St. Andrews, and an honorary Ph.D. of Upsala and Prague.

**GASKELL.**—At Roseleigh, Woolton, Liverpool, on September 20, Lieutenant-Colonel James Bellhouse Gaskell, aged seventy-seven. Colonel Gaskell, who was one of the original directors of the United Alkali Co., Ltd., from which he retired a few years ago, was associated with Gaskell, Deacon & Co., chemical manufacturers, Widnes. In his early days he took a keen interest in the defence forces and obtained a commission in the South Lancashire Militia. He had been a J.P. for the West Derby Hundred since 1890. He was an extensive collector of Japanese ivories, of which he had many choice examples.

**HARRINGTON.**—At Hockley, Essex, on September 15, Mr. Arthur Lewis Harrington, chemist and druggist, aged seventy-six.

**KEMPTON.**—At 69 Amersham Road, London, S.E., recently, Mr. Ernest Arthur Kempton, chemist and druggist, aged sixty.

**MURPHY.**—At Doonfoot, Ayr, on September 16, Janet Smith Reid, wife of Mr. J. K. Murphy, chemist and druggist, Glasgow, aged thirty-five.

**NORRIS.**—At a nursing home, Burton-on-Trent, on September 15, following an operation, Mr. Alfred Beardmore Norris, chemist and druggist. Mr. Norris was a native of Boston, served his apprenticeship at Bowness-on-Windermere, and in 1875 he went to Burton-on-Trent as assistant to the late Mr. Hodson. He passed the Qualifying examination in 1878 and was afterwards in business for himself at Stapenhill and Horninglow. In 1886 he went to New Zealand, but the climate did not suit his health, and on returning to Burton-on-Trent, he opened the pharmacy in Branstone Road, in which he was recently succeeded by his son, Mr. A. V. Norris, Ph.C.

**SKIPWORTH.**—At Grantham, recently, Mr. Bertram George Skipworth, chemist and druggist, aged fifty-eight.

**STOOKE.**—At 164 High Street, Gillingham, Kent, on September 13, May Maria, the beloved wife of Mr. A. Stooke, L.D.S., M.P.S., aged sixty-five.

**WARD.**—At a nursing home, Blackburn, on September 18, Mr. Thomas Armistead Ward, chemist and druggist, managing director of T. A. Ward & Co., Ltd., manufacturing chemists, Exchange Street, aged sixty. Mr. Ward was born at Burnley, but was educated at Wigan Grammar School. He served his apprenticeship with Mr. Phillips, chemist, of Wigan, a former Mayor of the borough. Later he went to Blackburn and became associated with the firm of Clayton, George & Ward, of which he was the junior partner. He subsequently became sole proprietor, and in 1907 converted the business into a limited company. He was a prominent Freemason and an active member of the Parish Church. He leaves a widow and one daughter.

**ENGLISH PEPPERMINT OIL.**—For the second year in succession, Reigate (Surrey) Corporation has devoted two acres of its farm to the growing of peppermint, for the production of peppermint oil. Last year the peppermint crop was sold at about £25 an acre to four firms, who made the harvesting arrangements themselves.

## Trade Notes

HEPPELLE, LTD., 16 Grosvenor Place, London, S.W.1, in their advertisement, make a special offer of four of their advertised lines.

BONCILLA LABORATORIES, for which Quelch & Gambles, Ltd., are sole agents, make an interesting announcement regarding the supply to the public of vouchers for Boncilla toilet preparations.

MIRA NATURAL MINERAL WATERS are being advertised to the public in the "Daily Mail," which should bring increased sale. The sole importers are Everett & Co., 5 Lloyd's Avenue, London, E.C.3.

LEICHER'S GREASE PAINTS.—Heaths, Ltd., High Street, Wavertree, Liverpool, have been appointed sole selling agents for the Leichner's cosmetic preparations for Lancashire, Cheshire, North Wales, and Isle of Man.

WIRELESS GOODS.—Ward & Goldstone, Ltd., Pendleton, Manchester, in their advertisement in this issue, give a selection of the apparatus for wireless telephony which they manufacture. A special catalogue of these goods will be sent on request.

CALIFORNIAN POPPY SHAMPOO POWDER.—J. & E. Atkinson, Ltd., Eonia Works, Southwark Park Road, London, S.E.16, make an announcement regarding a bonus of shampoo powder given with orders for Californian Poppy Perfume. A special window card is also offered with a view of stimulating sales.

CORAMINE is the short name for pyridine- $\beta$ -carbonic-acid diethylamide, which is supplied by the Clayton Aniline Co., Ltd., 68½ Upper Thames Street, London, E.C.4. Reprints of an article by Dr. E. S. Faust dealing with this medicament, which appeared recently in "The Lancet" will be sent on request.

RADIO RECEIVING APPARATUS.—Among the latest additions to the wireless apparatus manufactured by A. J. Stevens & Co. (1914), Ltd., Charing Cross Road, London, W.C.2, is a two-valve receiver. The circuit, enclosed in a tastefully designed mahogany cabinet, is a detector and note magnifier, so that a near-by broadcasting station is obtained at loud-speaker strength, and, under favourable conditions, the other main broadcasting stations can be received on the telephones. Messrs. Stevens guarantee all their receivers for twelve months against defects arising through faulty workmanship or materials, and give a free insurance policy covering an instrument up to its list value against loss or damage by storm or fire, burglary or larceny, and against public liability up to £250.

"THE AYRTON LINK," the house organ of Ayrton, Saunders & Co., Ltd., Liverpool for September, contains an interesting contribution from Mr. W. H. Saunders, the managing director, describing his experiences as a commercial traveller. He started out as a traveller over fifty years ago. In another part of the magazine we came across the following, which we may be pardoned for reproducing:—

We have watched with increasing wonder the issue in serial form of the "Commercial Compendium" in THE CHEMIST AND DRUGGIST. Truly a remarkable enterprise, and possibly the outstanding feature of the year on the trade side of pharmacy. The compiler manages to make his pages as interesting as any in the journal, and has such breadth of outlook and wide vision of what the retailing chemist is likely to require in adapting his craft learning to commercial usage, that we hardly feel justified in attributing the effort to one personality. If you are stuck on a question of Pure Pharmacy, turn to the Commercial Compendium. Should Company Law in its relation to pharmacy ensnare you, the way out is *via* the C.C. The most unthought-of subjects are there for your consideration, as witness such headings as "Co-operating with the Staff," and, wonderful to relate, these subjects are not dealt with in the high-brow "efficiency" magazine manner, but with real insight into human nature. We can see this clever idea being copied by trade journals of other interests, but meanwhile our valued *C. & D.* is wearing with true dignity and modesty a real halo of intense brilliance.

ARTIFICIAL LIMB MAKERS, meeting in London on September 7, protested against a reduction in the number of contractors on the official list of the Ministry of Pensions.

## Business Changes

R. P. CHANTLER, LTD., chemists, Luton, are opening a branch at 15 Church Street, Amptill.

WAVELL'S, LTD., chemists, will shortly open a business in Vauxhall Bridge Road, London, S.W.1.

MR. T. YOUNG, chemist and druggist, is opening a business at 233 High Street, Gorleston-on-Sea.

MR. F. J. NORMAN, chemist and druggist, is shortly opening a pharmacy at 171 Wallasey Road, Wallasey.

MISS OLIVE BROOKE, chemist and druggist, is taking over the business in Acomb, York, carried on by her father.

MR. J. W. HARPER, chemist and druggist, has taken over the Elmers End business of Mr. C. G. Pinchen, chemist and druggist, Beckenham.

E. G. GARROD & Co., druggists' sundriesmen, 37 Basinghall Street, London, E.C.2, are removing on September 26 to 4 and 5 Warwick Court, Holborn, London, W.C.1.

## Recent Patents

Abstracts of specifications of recently-granted patents for inventions. The complete specification (is. each including postage) of any British patent can be obtained from the Patent Office, 25 Southampton Buildings, London, W.C.2, on quoting the name of the patentee and the number of the patent.

**Preparation for Cleaning Stone.**—A paste for cleaning stone surfaces, consisting of a mixture of soap, pumice powder, caustic soda, and potassium carbonate. (C. F. Higgins. 238,784.)

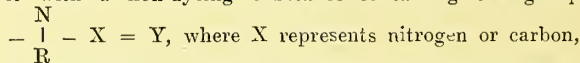
**Alcohol Fuel.**—To denature alcohol for use in the production of heat, light and power, and as a motor fuel, alcohol is mixed with tetra-hydronaphthalene or deka-hydronaphthalene. (R. De Sarigny. 238,818.)

**Mustard Oil.**—Crushed seeds of white mustard are first treated with benzol to extract the fatty oil, the mass is then mixed with water to form a paste, pressed, and the residue extracted with ether, yielding pure sinalbin mustard oil. (G. Scheib. 225,524.)

**Acetic Anhydride and Aldehyde.**—A process for the manufacture of acetic anhydride and aldehyde, consisting in decomposing ethylidene diacetate in the presence of a halogenated zinc derivative. (Société Chimique des Usines du Rhone. 238,825.)

**Shaving Brush.**—A shaving brush, the handle of which is hollowed out to form a container for a liquid or powder, one side of the container being normally closed by an imperforate plunger or diaphragm, which, when pressed, ejects the liquid or powder through one or more apertures. (A. Simpson. 238,274.)

**Protection Against Moth.**—A process for protecting material from the ravages of moth consisting in treating it with a non-dyeing substance containing the group



Y represents nitrogen or carbon or a nucleus, and R represents hydrogen, a hydrocarbon radicle, an acid group or the  $\text{CH}_2\text{COOH}$  group, or the like. (Farbenfabriken vorm. Frieder., Bayer & Co. 238,287.)

## Gazette

### Bankruptcy Acts

#### RECEIVING ORDER AND ADJUDICATION

BOOTH, T. A., 16 The Grove, and Louisa Street, Idle, Bradford, wholesale manufacturing druggist.

### Partnership Dissolved

WADDELL, R. H., and BOWYER, W. H., 68-70 Newington Causeway, S.E.1, manufacturers of chemical products, under the style of Alkaline Products Co.

## Observations and Reflections

### Mr. Ferrall's Resignation

is an event of no slight importance in Irish pharmaceutical circles, none the less because it serves to mark the close of a period in the history of the Society which he has served so long and so well. During the long period that he has been Registrar, he has worked on steadily under conditions which must at times have been distinctly trying; but he has survived the stress and strain and is retiring full of honour. It is delightful to know that his pioneer and constructive work for pharmacy in the sister island are to be recognised in a practical way, and it is to be hoped that he will long survive to enjoy his well-earned rest after forty-one years of unremitting labour.

### Physiological Standardisation

of drugs and other remedial agents promises to become of increasing importance in medicine and pharmacy, but it hardly seems right that the cost of it should be provided by the overburdened members of the Pharmaceutical Society. Expenses will be heavy if the proposed pharmacological laboratory is staffed, equipped and maintained generally in a thoroughly satisfactory manner. Revenue from external sources is not likely to be great, and it follows that the cost of maintenance must be provided chiefly out of the Society's funds, which means in practice the members' subscriptions. For advertisement and propaganda purposes the establishment of the laboratory may be excellent, but it cannot fail to prove a costly experiment. Added to the other commitments of the Society, known and secret, the burden cast upon the members will be grievously heavy, and any prospect of reducing the annual subscription would appear to be very remote.

### Something in Return

ought to be provided for members of the Society by entitling them to the privilege of having galenicals made by themselves tested in the new laboratory on reasonable terms. Years ago, when chemical assay processes began to make prohibitive the economical production of tinctures and liquid extracts on the modest scale to which many of us were accustomed as apprentices, the suggestion was made that pharmacists might be encouraged to continue the old practice if the necessary assay work could be done in the Pharmaceutical Society's laboratories for a moderate fee in each instance. Nothing came of the suggestion at the time, but there seems to be no particular reason why it should not now be revived. There are certainly some pharmacists who would be encouraged to make their own galenicals as formerly if they could depend upon being able to have their products tested, chemically and physiologically, in the Society's laboratories.

### Analysts who are Pharmacists

usually rank high in their profession, and there can hardly be any question that, other things, being equal, pharmacists make some of the best analytical chemists. Being interpreted, this means that, given two persons who are fairly equal in ability and have had equal advantages in special training, as chemists, if one has also qualified as a pharmacist he may be expected to excel as an analyst, because of his special knowledge of materials and the properties of substances with which he is the more likely to be familiar. One can, therefore, sympathise with the desires of those pharmacists who are trying to make secure their right to practise as analytical chemists, and it will be interesting to watch the progress of the newly-formed Chemist-Analysts' Institute. But the names of some pharmacists who have made their reputation as analysts are missing from the list of the promoters of the Institute, and there is a natural curiosity regarding the extent to which this movement for recognition has the support of those who have already established their position. The objects of the Institute appear to go beyond securing recognition of pharmacists as analysts, but the statements made by speakers at the meeting reported last week did not indicate much more beyond

general support and stimulation of the Pharmaceutical Society. Though the new Institute may not want to encroach on the sphere of any other body connected with pharmacy, it is difficult to see what can be done without such encroachment, and the granting of diplomas in analytical chemistry will certainly be regarded as an encroachment on the functions of the Institute of Chemistry.

### Doctors' Supply of Drugs

for insured persons is a matter that has been in need of disentanglement, and your general survey of the position is most helpful. Chemists ought to know exactly what drugs must be supplied by doctors; also what others may be so supplied, and under what conditions. The fact that doctors receive a definite payment for the supply of all drugs and appliances needed for immediate use or application seems to have a bearing on the question of late dispensing service. It should obviously be unnecessary for chemists to remain on duty for unduly long hours, or to set up a rota, for the purpose of relieving doctors from the duty of providing emergency drugs when required. I shall await with interest your further elucidation of the position, and am particularly desirous of knowing the correct answer to the question: What does the capitation payment made to each doctor actually include?

### Looking Ahead,

as everyone in business ought to do, the practical man will gain from your latest Green Supplement ideas which will help to shape his course when planning for Christmas trade. There are, it seems to me, two main groups into which goods displayed at Christmas naturally fall—gift articles for immediate use, and those which will be of service some time later. Special Christmas lines in perfumery and dainty toilet articles should preferably be displayed well in advance of the festive season, because the man in the street, to say nothing of the experienced woman shopper, tends to look ahead as well as the trader. Goods actually displayed during Christmas week may well be selected largely from possible requirements of the period from then till Easter. Think of the long and pleasurable anticipations induced by the gift of a photographic camera at Christmas, and of the extra business in the way of supplementary sales that may follow, in preparation for the putting into actual use of the camera at a later date.

### Cochineal,

on which earlier in the year Dr. MacDougall discoursed in Edinburgh, was long thought to be the fruit of a tree, and it was not until well into the eighteenth century that the error was finally disposed of. Thus Du Bartas (who places it in the Garden of Eden), in Sylvester's translation (1613), says:—

There lives the Sea-oak in a little shel;  
There grows untill'd the ruddy cochenel;

and his commentator thus explains the second line: "This is a graine first of all brought from the East; and I have heard that certaine caterpillers doe every yeere cast out the same in a certaine time, as the silk-wormes doe; some likewise hold that it is a part of their bodies." In our Pharmacopœia, however, it was from the first classed with animals, though Quincy speaks as if in his day there were still two opinions about it, as indeed there were. One of the earliest mentions of cochineal from "the Spanish Indies" occurs in Hakluyt under date October 9, 1589. We read in Captain John Smith's "Description of New England" (1616) of the capture by a French fleet, while he was a prisoner with them, of a "West-Indiesman" with "50 chests of cutchanell" on board, designed for the dyeing trade chiefly. It was much esteemed and largely used in medicine, though with caution, being thought dangerous in large doses. Beckmann says it was gathered on St. John's Day, and thence called St. John's blood. It was supposed to give a peculiar value to Bate's pulvis purpureus (which otherwise resembled Gascoign's Powder), which was, on its account I suppose, prescribed, among other intentions, for "the Purples."

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## Editorial Articles

### Insurance Dispensing Position.—VI

### Doctors' Supply of Drugs.—(2) The Urban Practitioner

WE considered in some detail in our issue of September 19 (p. 404) the Regulations which control the supply of drugs and appliances by practitioners to insured persons. We now examine the position of doctors situated in an area where an adequate pharmaceutical service is available and see how they are affected by these Regulations.

*Emergency Drugs.*—The doctor in the town is only concerned with the supply of emergency drugs and those personally administered (Classes E and P). His duty in regard to ordinary drugs (Class O) is to order them on a prescription form. These should not be supplied by the doctor himself. Every doctor is called upon at times to attend cases of accident or sudden illness which require immediate treatment; and whatever is needed then, the doctor on the spot must provide. Every doctor, therefore, must supply personally the drugs included in Class E. The cost of these is refunded to him through the capitation payment.

*Appliances.*—The only appliances which the doctor is required to supply himself are those needed for immediate application. The Regulations carefully omit any reference to "appliances necessarily or ordinarily applied by a practitioner in person." All emergency dressings, therefore, must be supplied by a practitioner personally. The cost is covered by the capitation payment.

*Drugs Administered Personally.*—With regard to those in Class P, the conditions of supply are different for the different sections of this class. Those in Section R, the ordinary drugs which a doctor generally administers himself, must be supplied by the doctor. They should not be ordered by prescription. The cost is included in the capitation payment. With regard to the special drugs which are included in the distribution scheme list (Section S), the doctor may choose whether he supplies them himself or gives the patient a prescription for them. If he elects to supply them himself he will receive a special payment for them at tariff rates. Apparently the practitioner is excused from supplying Section S drugs himself because, being mostly of the hypodermic type, prepared in ampoules, they are generally more expensive than ordinary drugs. If a practitioner orders on a prescription form any preparation for which payment will be made to him at the capitation rate, a charge for that article is being made twice against the drug fund—once through the payment to the doctor, and once again through the amount paid to the chemist who dispenses the prescription.

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## THE CHEMIST AND DRUGGIST

(PUBLICATIONS DEPARTMENT)

42 CANNON STREET - - LONDON, E.C.4

It is difficult to decide in the case of specific articles whether they should be supplied by the chemist or the doctor, and whether payment for them is included in the capitation payment or not.

**SOME EXAMPLES** We confess we find these questions somewhat complicated, and we hesitate to make decisions in particular cases. It may be, however, that we shall provoke discussion of these matters by so doing, and therefore we have attempted to classify and give examples of the different drugs we have referred to. It does not necessarily follow that our interpretation of the regulations would be confirmed by the Ministry of Health or by any particular Insurance Committee. The chief point on which doubt arises is in the interpretation of the phrase, "drugs necessarily or ordinarily administered by a practitioner in person." To say that chemists should not supply (and if they supply they are not entitled to payment for) drugs which are ordinarily administered by a doctor in person is quite correct, but it is not an easy matter to name the actual drugs referred to. Possibly this particular provision of the Regulations is not rigidly enforced.

**Hypodermic Tablets.**—Hypodermic morphine tablets can be administered by a nurse or by some other attendant on the patient. In fact, they are on occasion used for oral medication. Presumably, therefore, they may be ordered by prescription to be supplied by a chemist. The cost of these does not necessarily appear to be included in the capitation payment; but if they were supplied by a doctor they would be deemed to be so included. No claim made by a practitioner for any extra payment for them would be entertained by an Insurance Committee.

**Ampoules.**—An ampoule containing camphor in oil or a solution of strychnine would ordinarily be used by a doctor himself. These drugs are not included in the special list, and therefore it would seem that (a) the doctor himself should supply them; (b) payment for doing so is included in the capitation payment; (c) he should not order them by means of a prescription. It is by no means certain, however, that payment for these prescriptions would be refused if dispensed by a chemist. Ether to be used for anæsthetic purposes, or nitrous oxide gas, should be supplied by the doctor. Chemists should refuse to dispense Insurance prescriptions for ether and nitrous oxide.

**Supply Optional.**—Preparations of suprarenal, pituitary or other gland substances in ampoules, colloidal preparations for hypodermic use, splints of a special type, ethyl chloride for local anæsthesia, and any vaccines or serums may be supplied either by doctor or chemist; and whoever supplies will be paid for the article at tariff rates.

**Drugs Chemists Must Supply.**—Colloidal preparations to be taken by the mouth, thyroid or pituitary tablets or any glandular preparation for oral administration should not be supplied to a patient by a doctor, but should be ordered by means of a prescription to be dispensed by a chemist. We qualify this statement by two clauses:—(1) Our remarks refer to a doctor situated in an area where chemists' shops are available for dispensing, and (2) due regard must always be had to the "emergency" proviso. Chemists should guard against dispensing prescriptions for preparations which, because they are ordinarily administered by a doctor and not included in the special list, should be supplied by the doctor—for which, indeed, he is paid at the capitation rate. This may be one of the sources of loss through disallowance about which chemists complain.

If a practitioner supplies to a patient any of the drugs

or appliances in the special list, he must make a claim upon the Committee for the cost of these, exactly as if he were a chemist under contract with the Committee. He submits prescriptions giving details of the articles supplied, fills in particulars of his claim on the appropriate account form, and is paid for these—again just like a chemist—according to the rates set out in the drug tariff. These accounts submitted by doctors are checked by Insurance Committees, and presumably any claim for payment in respect of articles not included in the list would be refused by the Committee. It is important (not to safeguard the drug fund, but to preserve the established principle) for chemists to see that articles which should be ordered by prescription to be dispensed by a pharmacist are not supplied by a practitioner. In other words, chemists should get all the dispensing they are entitled to under the Act. They can expect no more than this: they should obtain no less. We shall emphasise this principle again when we consider the position of the rural practitioner who in certain circumstances may be required to supply all necessary drugs and appliances to his patients. The chemists' rights in this matter should be safeguarded, for the Regulations have provided for this point. The third Schedule of the Regulations deals with the pharmaceutical service, and Clause 2 of Part II provides as follows:—

(1) The Insurance Committee shall, if any person supplying drugs or appliances so requires, afford him reasonable facilities for examining all or any of the forms on which the drugs or appliances supplied by him were ordered, together with particulars of the amounts calculated to be payable in respect of such drugs and appliances.

(2) The Committee shall, if so required by the Pharmaceutical Committee, afford that Committee similar facilities for examining such forms and particulars relating to all or any of the persons supplying drugs or appliances and will take into consideration any objection made thereto by the Pharmaceutical Committee.

According to our reading of the above, the Pharmaceutical Committee for any area is entitled to examine the accounts for drugs, etc., supplied to insured persons by doctors. The wording of the Regulation quoted appears to be quite definite. It is not stated that "The Pharmaceutical Committee is entitled to examine accounts submitted by persons on the list of those who supply drugs" (in which list doctors are not included), but "The accounts of all or any of the persons who actually supply drugs," and this includes doctors as well as chemists. This seems the more certain, since in Clause 4 of the same Schedule, which provides for deductions from chemists' accounts to defray the expenses of Pharmaceutical Committees, where persons supplying drugs and appliances are referred to, medical practitioners are specially excepted from this class. Urban practitioners who wish to claim the cost of drugs necessarily administered in person (drugs for which they do not consider they are paid by the capitation allowance) must submit accounts to the Insurance Committee. Rural practitioners who, by one method, are paid according to the drug tariff (when they are required to supply all drugs to their patients) must submit accounts to the Insurance Committee. How many Pharmaceutical Committees examine the accounts submitted by practitioners in respect of the drugs and appliances they have personally supplied? Does the Retail Pharmacists' Union—the custodian of the interests of Insurance chemists through its central checking bureau, supported with funds obtained by deductions from the moneys due to Insurance chemists—ever examine these "forms and particulars relating to [this special class of] persons supplying drugs and appliances" in order to ensure that this vital principle, which is now established by legal enactment, shall for the present and for future generations of pharmacists be jealously preserved?

### The Cheapness of Sugar

WITH the opening of the new sugar season attention has been attracted to production prospects in the chief cane and beet sugar growing countries. Interesting early forecasts have already been circulated relating to the European beet crops and the Cuban crop, which between them are estimated to yield an excess of roughly half a million tons compared with last season. It is, of course, too early yet to take these forecasts too seriously, as much depends on the weather conditions during the harvest. The current Java crop shows an increase of about 200,000 tons, or double what had been anticipated. Production from these main sources of supply would, according to present tentative estimates by certain experts, compare as follows with the two previous seasons:—

In tons	1923-4 season	1924-5 season	1925-6 season	Excess over 1924-5
European beet crops	5,057,000	7,175,000	7,395,000	225,000
Cuban crop ..	4,066,000	5,100,000	5,357,000	257,000
Java crop ..	2,000,000	2,200,000	?	?
Totals ..	11,123,000	14,475,000	—	—

It is naturally to be assumed that market conditions in the new season will be largely governed by the increased competition between Cuban and European beet sugar, apart from the prospective further progressive rate of the world consumption. Taken as a whole the development of consumption in the past season has been fairly satisfactory, and the chief consuming countries, particularly America, Germany and France, have absorbed considerably more sugar since the fall in prices. While American consumption for the current year was estimated at approximately 5,300,000 tons, that of Germany has been placed at about 1,400,000 tons, against her production for the past season of 1,600,000 tons. The returns of consumption in this country have proved disappointing compared with other large consuming countries, as will be seen from the following official figures covering the first eight months of this year:—

In tons	1923	1924	1925 to date	Increase on year
Total U.K. imports ..	1,108,153	1,223,582	1,350,306	166,724
Total U.K. consumption	984,901	1,071,620	1,125,580	53,960
Total U.K. bonded stocks	313,850	209,000	330,400	121,400

Compared with the first eight months of 1924, the excess of home consumption this year only amounts to about 54,000 tons, or 5 per cent., in spite of the substantial fall in prices since this time last year—namely, about 11s. per cwt. for home or American granulated sugar. Our total imports indicate a considerable increase, and the stocks held in bond on August 31 amounted to 330,400 tons, against 209,000 tons at the same date in 1924. A noteworthy feature is that the receipts of preferential sugar have tended to assume much larger proportions of late, while Australian sugar has begun to arrive against the very large orders (roughly 200,000 tons) that were placed this year by home refiners. The movement of supplies of Colonial preferential sugar to this country, to which Natal centrifugals have been added just lately in considerable quantities, may well be expected to expand further as time goes on, seeing the preferential rate of duty was only reduced from July 1 this year. Thanks to this important development, our total imports of preferential sugar, including home-grown beet sugar, under the subsidy in force, the yield of which this season has been estimated at about 76,000 tons, against 26,000 tons last season, may be expected to reach about 50 per cent. of the aggregate home consumption, which is now at the rate of approximately 1,500,000 tons per annum. The home refining industry is being strengthened, therefore, against its foreign competitors, and is becoming

more independent of foreign raw sugar. Dealing with the depression in sugar on July 18 last (*C. & D.*, p. 100), we expressed doubt that the worst of the depression had been seen. Since then, despite occasional transient rallies, prices have yielded further ground as a result of liquidation on speculative account and the bearish crop outlook. The fact has to be recognised, however, that, owing to the filling of big orders on German and Russian account, the old surplus of Continental sugar was quickly absorbed, and, in addition to this, important tonnages of Java and American granulated, as well as Cuban raw sugar, were taken by European countries. Russian requirements of imported sugar in the current season will probably be much smaller, as her domestic crop is estimated at considerably more than last year—about 430,000 tons—while it is probable that the crops in Germany and Czecho-Slovakia will again be larger. On the other hand, Southern European countries are expected to produce rather less, while there is still some apprehension regarding the French and Belgian crops. The French harvest is anticipated to be belated, and warmer weather is now wanted in order to improve the percentage of sucrose. Recently the price of white prompt sugar in the terminal market depreciated down to 14s. per cwt., almost the lowest figure touched this year and since pre-war days, while Cuban raw sugar sold freely down to 11s. 3d. c.i.f. home ports. But a somewhat sensitive feeling has been aroused by the rather cold weather reported from the Continent, and the trend of prices at the very low level is to harden a little, particularly in forward positions, as it is not expected that much new Continental sugar will become available for another month or so. In the meantime the Cuban unshipped surplus has been much reduced, and seems like shrinking to quite manageable proportions before the new crop begins late in the year. The present statistical position is certainly much healthier than might have been anticipated months ago, and the world consumption, which may be placed at about 22,000,000 tons in view of the low price, would find itself against prospective resources for the new campaign of roughly 23,500,000 tons. But if anything should occur to interfere with crop developments the market would doubtless be rendered rather sensitive while trade stocks practically everywhere are low, although certain authorities express the view that, at current values, the apparent excess of supplies has been discounted.

### Wills

MR. FREDERICK WARNEFORD, Highworth, Sussex, retired chemist, who died on June 26, left estate of the gross value of £5,577 6s. 1d., with net personality £329 0s. 4d. Probate has been granted to his widow, Mrs. Ann Warneford, and Samuel Denning. The testator left £15 to Mr. Denning as executor, and residue of the property to his wife during widowhood and then for his children. He directed that his radial artery is to be opened at his death to make sure life is extinct.

MR. CHARLES GRANVILLE WOOD, chemist and druggist, 1 Croft Brow, Garden Suburb, Oldham, senior partner of Granville Wood & Co., who died on March 16, left £5,751 4s., with net personality £5,643 15s. 11d. The executors are Mrs. Wood, the widow, John Edward Wood, of 242 Abbey Hills Road, Oldham, brother, and Frank Leonard Potter, of 4 St. Thomas Street, Oldham. Subject to a legacy of £500 to his wife, he leaves the whole of the property in trust for her for life, and on her death in trust for his brother and sister, John Edward and Minnie, and the survivor of them, and on the death of such survivor for the Oldham Deaf and Dumb Society, Oldham Royal Infirmary, Oldham and District League of the Blind Benevolent Society, and Oldham Microscopical Society.

## The Adulteration of Saffron

By Ernest J. Parry and F. C. J. Bird

It is well known that saffron, being such an expensive commodity, is sometimes adulterated. It is, however, probably not so well known to what an enormous extent adulteration is taking place. As the result of a very exhaustive examination of a parcel in connection with which a dispute had arisen, we have similarly examined a number of other samples exhaustively, and as a result of these examinations and certain inquiries we have made, we think it is no exaggeration to say that probably more than 75 per cent. of the saffron imported into this country is adulterated. The old method of adulteration by merely adding soluble mineral matter is seldom practised now. As pointed out by Pierlot ("Year Book of Pharmacy," 1924, p. 293), the most prevalent method of adulteration to-day is the skilful immersion of saffron in a saccharine solution of suitable strength and at a suitable temperature and the drying of the product at air temperature. By this means the saffron will take up 25 per cent. or more of its weight of the saccharine substance. Sometimes a little sodium or magnesium sulphate is also present, which is apparently added to make up the deficiency in the ash caused by the addition of the saccharine matter. As the ash and moisture limits are the only figures given by the British Pharmacopœia of 1898, the ordinary testing of saffron is usually carried out in a most casual manner, and samples whose ash and moisture corresponded with those figures and which showed no obvious adulteration, have usually been passed as pure. Apparently this sophisticated saffron is not always (if at all) packed as such, but is mixed with a certain amount of genuine saffron, which assists in masking the "feel" and appearance of the adulterated article. The result is an example of very clever sophistication, as the microscopical appearance is unaltered.

The foregoing are the details of our examination of the particular sample referred to. On very close examination it was observed that the stigmas and groups of stigmas differed slightly but distinctly in physical characters among themselves, and it was possible by careful picking over to separate the sample into two parts, each of which, together with the sample itself, was subjected to analysis. In the larger table the entire sample is referred to as "original" and the two parts as "A" and "B" respectively. The first column gives the results from an authentic sample of pure saffron.

Two other similar samples were found to give figures similar to the above and could be separated into two portions having different characters. The principal figures for these were as follows:—

	Sample No. 1			Sample No. 2			Sample No. 3		
	Original	"A"	"B"	Original	"A"	"B"	Original	"A"	"B"
Colouring power (pure=100)	85	100	70	80	100	64	82	100	66
Ash on dried saffron	4.9	5.5	4.0	5.1	6.1	3.9	5.2	6.3	3.8
Cellulose (on dry saffron)	4.2	—	—	4.3	—	—	4.1	—	—
Fehling's test	—	—	positive	—	negative	positive	—	—	positive

For the determination of the colouring power one gram of the dried and powdered saffron was exhausted with boiling water, made up to a given volume, and an aliquot part taken for comparison. Another aliquot portion was evaporated for the determination of the soluble extract. The special modification of Fehling's test was carried out by placing 2 c.c. Fehling's solution diluted with 6 c.c. of water, in a small flat-bottomed glass dish about 2 inches in diameter, and strewing on the surface a few of the saffron stigmas under examination. On heating the dish on a water bath for about one minute the unadulterated portion "A" turned dull brick red on the surface of the stigmas, the liquid itself being hardly affected, whilst the adulterated portion

"B" threw off a copious cloud of bright brick red deposit, which rendered turbid the surrounding liquid. The abnormal behaviour of this particular parcel of saffron may be summed up as follows:—

(1) The "original" saffron could be separated mechanically into two varieties, "A" (pure) and "B" (adulterated).

(2) The "A" (pure) portion of sample yielded ash 5.16 per cent., the "B" (adulterated) portion from same bulk only 3.21 per cent., indicating ashless weighting material.

(3) The colouring power as compared with good saffron (100) of the entire sample was only 80. The separated portion "A" (pure) came out at 100, whilst the "B" (adulterated) portion was 55, again indicating adulteration with a non-colouring material.

(4) The ash of pure saffron gives only a potassium flame test. The ash from (pure) portion of sample gave a K. flame, whilst the ash of "B" (adulterated) portion gave a sodium flame, indicating some foreign admixture.

(5) The water soluble extract of the "A" (pure) portion was 65.45 per cent., that of the "B" (adulterated) portion 77.26, indicating a soluble adulterant.

Test	Pure saffron	Sample under examination			Published figures, etc.
		Original	"A " separated from the original	"B " remainder of original	
Colouring power in aqueous solution	Per cent. Taken as 100	Per cent. 80	Per cent. 100	Per cent. 55	Per cent. —
Moisture	11.36	11.5	—	—	B.P.C. maximum 12 Fr. Codex. maximum 13 Amer. N.F. maximum 14
Ash on dried saffron	5.75	4.71	5.16	3.21	B.P. '98 about 7 (dried) Fr. Codex max. 7 (dry) Amer. max. 7.5 (not dried)
Ash-Flame test	Violet =K	Yellowish violet not pure K	Violet K	Yellow Na	Y.B. 1924 (Pierlot) Pure Saffron gives a violet flame with at most a tinge of orange, never yellow
Water soluble extract on dried saffron	66.74	70.7	65.45	77.26	Fr. Codex (on dry) 55-60 B.P.C. 13* Greenish 51 Y.B. (1912) 7.7*
Special Fehling's test (see below)	Stigmas only brick red	Inter-mediate	Stigmas only brick red	Copious cloud of brick red deposit in solution	—
Cellulose (fibre) on dry saffron	5.4 Another sample of pure 5.45	4	5.3	2.8	Y.B. 163, 1901 Average fibre content in genuine saffron 5.0 Samples examined 4.5 5.1 5.4
Reducing sugar (calculated as glucose) before inversion. After inversion	28.2  28.2	32.7  —	27.8  —	46.6  —	Analyst 1914, 312 21.75 After inversion 23.53 Pierlot, Y.B. 1924 23.2 After inversion 24.53  Y.B. 1912, 69 22.5-24.9 After inversion 38.1-39.7

\* These figures are obviously incorrect.

(6) Pure saffron, when placed in diluted Fehling's solution in a shallow dish and heated for one minute, turns brick red on the surface only. "B" (adulterated) treated similarly gave a cloud of brick red deposit, indicating a surface layer of reducing substance.

Although we should not like at present to suggest definite standards for the amount of water soluble extract and reducing sugars for pure saffron, there is an evident necessity for certain discrepancies in the published figures of various authorities (as will be noted in the column under "Published figures") to be cleared up. We are therefore examining samples of saffron from various sources together with others of known authenticity, and hope to obtain results which will enable us in a future communication to indicate, at all events, approximate standards for genuine saffron, in regard to water soluble extractive, reducing sugars and colour value as determined by Lovibond's tintometer.

## Commercial Notes

### Sicilian Sulphur Syndicate

DURING the first six months of the present year, 177,680 tons of sulphur were exported from Sicily (January-June 1924: 182,727 tons), while the output amounted to 107,465 tons (January-June 1924: 114,647 tons). On June 30 the stocks totalled 105,726 tons, against 170,638 tons on the corresponding date of last year. An important development in the Sicilian sulphur industry has to be recorded. The consortium has succeeded in securing the adhesion of all the sulphur refiners and producers in the formation of a single association, taking the form of a joint stock company, in which the whole of the production and export of Sicilian sulphur will be centred. The refiners are permitted to complete existing contracts, but henceforth new orders will be divided among the members according to a definite scale, in accordance with their individual importance. The new company has adopted as its title the letters "F.O.R.Z.A.," abbreviations of the words "fabbriche, opifici, raffinerie, zolfi, affini," with its head offices in Catania. The F.O.R.Z.A. proposes to deal directly with its customers outside Italy, and will maintain representatives only in a few of the chief centres, who, instead of receiving a commission of 1 per cent, as heretofore, are being asked to be content with  $\frac{1}{2}$  per cent. The formation of this syndicate as a single manufacturing and sales organisation, embracing the whole of the Sicilian producers of sulphur, is described as a protective measure against the increasing pressure exerted by the American sulphur interests.

### Cacao Butter Extraction

A NEW process for the extraction of cacao butter, known as the "solvent method," has recently been brought out and perfected in Canada (says the "West India Committee Circular"). This process, it is claimed, extracts 99 per cent. of the butter from the bean without using the usual hydraulic press, thereby enabling more beans to be handled and more butter produced at a great deal less cost than in extraction by pressing.

With a view to interesting the larger cacao planters in the process, owing to there being a good demand for cacao butter on the Continent, the Director of Agriculture of Trinidad and Tobago has been in communication with Colonel J. C. Harris, of Victoria, British Columbia, on the matter, from whom he has received the following informative reply:—

I have discussed the scheme for the carrying out of the "solvent method" process with Colonel Harris, and he suggests that if your Department could not establish a plant for the extraction of cacao butter by the "solvent method," a syndicate of the larger planters might consider it. He suggests that culls or broken beans which could not be sold in the open market, provided free from mustiness, would be available. Costs of production depend largely on the cost of the labour and the price of the beans. About 3 to 4 cents per lb. of butter obtained should cover the operation costs and solvent losses. The residual cacao would be practically free from butter, comestible, but of doubtful market value. It would be in a convenient form for the extraction of its theobromine content, a consideration of no small moment. Trinidad being situated in the tropics, it is only by adding the local knowledge of the climatic conditions to ours that an estimate of the cost of the plant can be made, but \$50,000 per ton of beans treated per day might be used as a basis to work from, that is, a plant handling, say, 5 tons of beans daily would cost in the neighbourhood of \$250,000. Wholesale price of cacao butter to-day is 35 to 40 cents per lb. in New York.

## Trade Report

The prices given in this section are those obtained by importers or manufacturers for bulk quantities or original packages. To these prices various charges have to be added, whereby values are in many instances greatly augmented before wholesale dealers receive the goods into stock, after which much expense may be incurred in garbling, packing, etc. Qualities of chemicals, drugs, essential and fixed oils, and many other commodities vary greatly, and higher prices than those here quoted are charged for selected qualities of natural products even in bulk quantities.

42 Cannon Street, E.C.4, September 24.

ALTHOUGH few price movements have taken place in the Mincing Lane produce markets, there is a fair amount of interest shown, values generally being firm. Interest in crude drugs this week is reserved to the auction. Cascara sagrada, chamomiles, and senega are unchanged; ergot is still difficult to deal in, and higher prices are asked for Maltese orange peel. Essential oils have been in better demand; large spot purchases of cassia have been made at rising prices. Sicilian oils have been fairly active at firm rates. French lavender is held for higher prices, and American peppermint is very firm, with some business reported. Among pharmaceutical chemicals business continues on a limited scale, with the bulk of price changes in favour of buyers. Acetanilide and hydroquinone are easier; milk sugar is lower. Methyl salicylate is firmer, and phenacetin is inclined to harden. Among industrial chemicals the demand is fairly good considering business conditions. Arsenic is very flat and easier; formaldehyde has been in rather better demand. Lead products are again higher. Carbolic acid is unchanged. Among fixed oils, business has been quiet and prices mostly unchanged. Palm oils are slightly dearer; castor is dull, with an easy undertone; cotton and groundnut are easier. Turpentine is dearer.

Higher	Firmer	Easier	Lower
Almonds Bergamot oil Cardamoms Cassia oil Ergot Eucalyptus oil Honey Ipecacuanha (Matto Grosso) Lead products Palm oils Pepper Turpentine	Lavender oil Lemon oil Methyl salicylate Orange oil Paraffin scale Peppermint oil (Amer.)  Steadier.  Formaldehyde Lithopone	Acetanilide Acid oils Arsenic Cotton oils Cresylic acid Ground nut oils Hydroquinone White oils	Ammon. chloride Benzaldehyde Citronella oil Farina (Dutch) Milk sugar Sugar

### Exchange Rates on London

The following is a list of Continental and other exchange rates against the pound sterling on London prevailing at 4 p.m. on Wednesday:—

Place	Method of Quoting	Par of Exchange	September 16	September 23
Amsterdam	Fl. to £	12.107	12.05½—12.06	12.05½—12.06
Berlin	M. to £	20.43	20.36—20.37	20.34½—20.35½
Brussels	Fr. to £	25.22½	112.05—112.15	111.15—111.20
Bulgaria	Lev. to £	25.22½	655—675	665—675
Calcutta	Per rup.	24½	18½d.—18½d.	18½d.—18½d.
Constantinople	Pst. to £	110	850—860	855—870
Greece	Dr. to £	25.22½	336—338	332—334
Hong Kong	T.t. \$	—	28½—29½d.	29½d.—29½d.
Italy	Lire to £	25.22½	119½—119½	118½—118½
Kobe	Yen	24.58d.	20½d.—20½d.	20½d.—20½d.
Lisbon	Pscu.	53½d.	2½d.—2½d.	2½d.—2½d.
Madrid	Pts. to £	25.22½	33.75—33.78	33.64—33.66
Montreal	\$ to £	4.86½	4.84½—4.84½	4.84½—4.84½
New York	\$ to £	4.86½	4.84½—4.84½	4.84½—4.84½
Oslo	Kr. to £	18.159	23.05—23.15	23.63—23.68
Paris	Fr. to £	25.22½	102.90—103.00	102.45—102.50
Singapore	Per dol.	—	28½d.—28½d.	28½d.—28½d.
Switzerland	Fr. to £	25.22½	25.10—25.11	25.10—25.11
Vienna	Sh. to £	24.02	34.40—34.43	34.40—34.45
Warsaw	Zloty to £	25.22½	28½—29½	29½—29½

## Cablegram

NEW YORK, September 23.—Business is fair. Peppermint oil in tins has advanced to \$15.50. Potassium iodide is also higher at \$3.75. Menthol has declined to \$10.75 per lb., and Curaçao aloes in cases is cheaper at 10c. per lb. Copaiba has been reduced to 45c., and mercury to \$81.00 per lb.

## Crude Drugs, etc.

AGAR AGAR is quiet, Japanese No. 1 offering at 4s. 6d., and No. 2 at 4s. 2d. per lb. on the spot.

ALMONDS.—The crop of Jordan and Valencia is less heavy than at first reported, and shippers report that at least 50 per cent. of the crop of Jordan have been disposed of, and that considerably higher rates must be anticipated later. Valencia, although dearer, have not appreciated to such a marked extent. Home trade are covering their season's requirements for both Jordan and Valencia. Sicily reports that buyers are holding off, but, at the same time, prices have advanced in some instances 15s. to 20s. per cwt. during the last three or four weeks. Morocco are arriving in fair quantities; a considerable proportion of these are bitter, and extremely high prices are asked.

ANTIMONY.—American reports are very firm, while advices from China suggest that there will be a continuation of tight conditions over the remainder of this year. Demand here has been only moderate, and English refined stands at £75 to £80. Chinese regulus on the spot is well held at around £65 10s., and terms for prompt shipment are about £63, c.i.f.

CASSIA LIGNEA has been more inquired for, 35s. per cwt. being obtainable for selected broken on the spot; whole selected is 55s.

CAMPHOR (REFINED) has been in better demand lately. Japanese slabs offer at 2s. 9d., and 2s. 8½d. in quantity.

CASCARA SAGRADA is steady and unchanged, with little business passing, last year's peel offering at 67s. 6d. per cwt. The "Challenger," from Portland to Liverpool, has brought 1,883 sacks.

CHAMOMILES are unchanged, fair white offering at 147s. 6d. per cwt., with the cheaper grades down to 135s. per cwt.

CLOVES continue quiet but steady, with Zanzibar offering on the spot at 11d. to 11½d. per lb. as to quality. To arrive, August-October is 10½d. and October-December shipment is offered at 10¾d. per lb. c.i.f. The statistics for the week ended September 19 show 800 bales were landed and 66 delivered, leaving a stock of 8,758, against 21,437 in 1924; and 17,110 in 1923. So far this year the landings have been 10,476, against 37,964 last year, and the deliveries 16,822, against 35,904 in 1924.

COD-LIVER OIL.—Our Bergen correspondent writes on September 21 that the market continues quiet owing to the fluctuating exchange in foreign currencies. Today's quotation is nominally for 174s. per barrel, c.i.f. London, for finest non-freezing steam-refined oil.

ERGOT.—Nothing offered in auction, and privately no satisfactory offers are available, 2s. 5d. per lb. c.i.f. being quoted for Spanish. Spot is 2s. to 2s. 3d. per lb.

FUSEL OIL in drums is quoted at 120s. per cwt. net for 90 per cent.

MAGNESIUM.—Under the more restricted quantities offering from the Continent, home-made metal has been in improved demand, and the tone is somewhat firmer with small ingots and sticks ranging from 3s. to 4s. 3d. per lb. Terms for powder range from about 4s. 9d. to 5s. 9d. per lb.

MENTHOL is steady and unchanged at 47s. per lb. on the spot for Kobayashi-Suzuki; forward positions are nominal at the moment.

MERCURY.—With the continuation of a rather slow demand from consumers, almost entirely for small lots, the course of the market is still colourless, but the tone has kept steady on the basis of about £13 10s. to £13 12s. 6d. per bottle. There are apparently ample stocks available, and users thus seem content to purchase from hand to mouth. Fair quantities have been reported from the Continent at about £12 15s. net c.i.f. terms.

LYCOPodium.—Treble sifted is quoted at 3s. 6d. per lb. net.

ORANGE PEEL.—Nothing offered at auction, and privately supplies of Maltese machine-cut are scarce, with nothing under 1s. per lb.

PEPPER is dearer, fair black Singapore offering on the spot at 10d. per lb. To arrive, October-December shipment has been sold at 9½d. to 9¾d., January-March at 9¾d. to 10d. c.i.f., f.a.q. Lampong is 10d. spot, and October-December has been sold at 9½d. to 10d. to 9¾d.; January-March has been done at 9¾d. to 10½d. to 10d. c.i.f. White Muntok has been quiet at 1s. 2½d. per lb. To arrive, October-December has been sold at 1s. 2½d. to 1s. 2½d. to 1s. 2¾d., January-March at 1s. 2½d. to 1s. 2¾d. to 1s. 2¾d. c.i.f., f.a.q. Singapore on the spot is 1s. 2d.

PIMENTO is quiet, with spot offering at 5½d. per lb. To arrive, September-October is 44s., and October-November 42s., c.i.f.

RUBBER has shown a steady tendency since our last report, although the spot price has declined by 1½d. per lb. The steadiness is due to the continuance of the American demand, which, although not on so large a scale as last week, has made further inroads on the home stocks. The Continent has also been purchasing fair quantities of "off grades" at full prices. The deliveries last week were the heaviest for many weeks past, viz., 2,477 tons, whilst arrivals totalled 2,010 tons; thus showing a further decline of 461 tons in the London stocks. At the present moment it is difficult to understand the reason why the forward positions continue to remain at so heavy a discount, especially in view of the fact that between now and the end of the year heavy buying is expected to take place from all quarters. The discount between September and December delivery at present amounts to 5d. per lb. for a period of two months only. Quotations (Wednesday, 5 p.m.): No. 1 standard ribbed smoked sheet, spot and November, 3s. 6d.; October-December, 3s. 2d.; January-March, 2s. 10d. per lb.

SHELLAC shows little change on balance, market being quiet. Usual standard TN orange is quoted at 210s. on the spot; fine second orange is 230s.; superfine, 245s. to 280s.; and AC cakey, 220s. Futures closed lower last week, sales including December at 207s. 6d. to 205s., and this week 200s. has been paid with further buyers. To arrive, TN for November-December shipment is quoted at 195s. c.i.f.

STARCH PRODUCTS, ETC.—Dutch maize starch powder (cornflour) is obtainable on the spot at 17s. 6d. per cwt., American is 17s. 6d. for September-October delivery and 16s. 10½d. for November-December; pearl starch is 17s. per cwt. for September-October delivery, and November-December is offered at 16s. 4½d. on the spot. American maize starch crystals is 21s. 6d. net, and Dutch crystals is 21s. 6d. per cwt. Dutch farina is cheaper at 19s. per cwt. for superior, and October-December shipment is 15s. 3d. f.o.b.; dextrins are unchanged; superior Dutch (maize) is 26s. 6d., and No. 2, 25s. 6d.; American canary, 21s. 6d.; and white, 21s. 3d. per cwt., ex store, London.

## Essential Oils

THE demand has improved this week, and generally a fair amount of interest is shown. Cassia has been active, and is dearer; Sicilian oils are also higher. French lavender and American peppermint show a firmer tendency. Citronella oils are cheaper.

The following are the quantities and values of the essential oils (other than turpentine) imported into and re-exported from Great Britain during August, 1925, compared with the same month in 1923 and in 1924, also for the eight months ended August 31, 1925:—

		1923	1924	1925
August imports (other	lb.	306,731	376,094	262,773
than turpentine) ..	value	£93,447	£95,588	£50,737
Jan.-Aug. imports do.	lb.	2,406,411	2,757,097	2,637,536
	value	£617,331	£763,697	£780,266
August re-exports do.	lb.	25,692	109,440	75,090
	value	£13,080	£30,838	£22,487
Jan.-Aug. re-exports do.	lb.	549,827	720,036	686,449
	value	£238,402	£255,881	£257,514

ANISE (STAR).—"Red Ship" on the spot is steady at from 3s. 4½d. to 3s. 5d. per lb.

BERGAMOT is irregular at the source, with forward quotations ranging from 25s. 3d. per lb. c.i.f. to arrive

upwards, according to brand. New crop is offered at 22s. 6d. to 24s. 6d. c.i.f. Fair sales have been made on the spot, and from 24s. 6d. to 25s. is quoted.

**CARDAMOM.**—Sales of Indian have been made at 120s. per lb.

**CASSIA** has been in active demand on the spot, supplies being considerably depleted. Business was done at from 8s. 4½d. per lb. for 80 to 85 c.a., and at the close there are buyers at 9s.

**CEDARWOOD.**—We understand that the production of American has been considerably curtailed recently and a firmer market is expected in the future. Spot is quoted at 2s. 7d. per lb. for cases and 2s. 5d. in drums.

**CITRONELLA.**—Ceylon is easier at 1s. 11d. per lb. on the spot, and for shipment at 1s. 9½d. c.i.f. to arrive. Java is also cheaper at 3s. 4d. spot and 3s. 3d. c.i.f.

**CLOVE.**—English distilled is unchanged on the spot at from 6s. 6d. to 7s. per lb. for 90 to 92 per cent. eugenol.

**LAVENDER.**—According to recent reports, fair sales of French, 38 to 40 per cent., have been made, and up to 32s. fr. is now quoted at the source. The poor yield has been confirmed in several directions, but the rapid increase in price is said to be due rather to the exceptional demand this year at the beginning of the crop. Spot quotations have been advanced during the week, from 27s. 6d. to 30s. per lb. being quoted as to holder. Opinions concerning the ultimate trend of the market are still conflicting.

**LEMON.**—Forward prices are firm for prompt shipment at 6s. to 6s. 9d. per lb. c.i.f. to arrive. New crop offers are current at from 5s. 7d. to 5s. 9d. c.i.f. Spot quotations have been advanced, from 6s. to 6s. 6d. being asked as to holder; sales have been reported up to 6s. 3d.

**PALERMO, September 18.**—Since our last report there has been a pronounced improvement in the value of the lira, which is reflected in higher prices in foreign currencies. The demand from abroad quietened during the past four weeks, but as this slackness in export business is seasonable it has had little effect on the market position, especially as the total exports of lemon oil this season are ahead of any preceding year. Some speculative transactions continue in new crop, but, generally speaking, neither buyers nor sellers appear anxious to take engagements. As we already reported, the prospects for the lemon crop are not encouraging, and this makes growers hesitate before disposing of their crops, while the comparatively high prices render buyers exceedingly cautious.

**LEMONGRASS.**—Cochin has an easier tendency at 4s. 4d. per lb. spot and 4s. 3d. c.i.f. to arrive.

**MINT.**—Japanese dementholised Kobayashi-Suzuki, after a slight decline to 24s., is now 24s. 6d. per lb. on the spot. January-March shipment declined during the week to 13s. 3d. c.i.f., and later business was done at 13s. 6d. c.i.f., with further sellers at 13s. 9d. For shipment afloat 21s. 9d. c.i.f. has been paid. Sellers of October-December at 15s. 6d., and September-October at 17s. 6d., both c.i.f.

**NUTMEG** is quiet and easier, with spot offers at 6s. 6d. per lb.

**ORANGE.**—Sicilian sweet is dearer to arrive, with offers at 10s. per lb. c.i.f. Spot is quoted at from 10s. to 10s. 6d., as to seller.

**PEPPERMINT.**—The position of American natural oil has been strengthened recently, and pressing needs of the English market have been filled at higher values. Forward prices range from 65s. to 67s. 6d. per lb. c.i.f. to arrive. Spot oil is nominally 70s.

**ROSEMARY.**—Spanish is unchanged, with sellers on the spot at 2s. per lb.

**SPEARMINT.**—American is offered at 43s. 6d. per lb. for delivery out of a small consignment.

**SPIKE.**—It is reported that since the crop this year of Spanish has been so late, the yield will probably be small. Prices in pesetas are higher by the equivalent of about 9d. per lb. On the spot sellers quote from 4s. 9d. to 5s. 6d. per lb. as to quality. Demand recently has been fairly active.

**VERIVERB.**—Bourbon on the spot is quoted at from 48s. to 50s. per lb.

**WORMSEED (CHENOPODIUM).**—American is quoted at 22s. to 22s. 6d. per lb. c.i.f. to arrive.

**WORMWOOD.**—According to recent reports the American crop has been disappointing and higher prices are now quoted at about 21s. per lb. c.i.f. to arrive.

The following arrivals of essential oils have taken from the countries named during the period September 10 to 16 inclusive:—Cassia (Ch.), 15 cs.; cinnamon (Germ.), 1 cs.; cinnamon leaf (Cey.), 1 dm.; citronella (Jv.), 5 dm. (Cey.) 1 dm.; eucalyptus (Sp.), 40 cs.; geranium (Réun.) 1 dm. (Fr.) 3 dm.; jasmin (Fr.), 1 cs.; lavender (Fr.), 2 cs.; lemon (Czechoslov.) 1 cs., (It.) 15 cs.; lemongrass (Br. Ind.), 31 dm.; mandarin (It.), 1 cs.; mint (Jp.), 10 cs.; orange (It.), 1 cs.; peppermint (U.S.) 5 cs., (Germ.) 3 cs.; pimento (B.W.I.), 2 dm.

During the period September 17 to 22 the arrivals and destinations were as follows:—Anise (Fr.), 5 dm., 41 pkgs.; bay (B.W.I.), 5 cs.; bergamot (It.), 17 cs.; cajuput (D.E. Indies), 5 cs.; citronella (Belg.), 3 dm. (Cey.), 3 dm. (Jv.), 2 dm.; copaiba (U.S.), 5 cs.; eucalyptus (Aust.), 5 cs., 6 dm.; geranium (Fr.), 2 cs. (Germ.), 2 dm.; lavender (Fr.), 1 cs.; lemon (It.), 153 cs.; lime (W.I.), 6 cs.; mint (Jp.), 10 cs.; orange (It.), 2 cs.; palmarosa (Br. Ind.), 8 cs.; peppermint (Germ.), 6 cs.; pine (Switz.), 1 cs.; rosemary (Sp.), 3 dm.; spike (Sp.), 4 dm.; undescrbed (Germ.), 2 cs.

### Pharmaceutical Chemicals, etc.

A FEW further alterations in prices are recorded, being mostly to lower rates on account of keen competition and scarcity of business. Bromides rather tend to recover slightly, and salicylates, with price cutting still in evidence between British makers, are rather healthier. Business generally has been very limited.

**ACETANILIDE** is rather easier with some offers down to about 1s. 5½d. for large parcels and 1s. 5½d. to 1s. 6d. for ordinary quantities.

**AMIDOPYRIN** meets with nothing but small business, and prices are unsteady when quoted at 13s. 6d. and upwards; sales at about 13s. 3d. per lb.

**ASPIRIN.**—British makers appear to control this market to a large extent with the price listed down to 2s. 5d. for very large quantities. For smaller lots up to about 2s. 8d. is quoted.

**BARBITONE** is in free supply with dealers' prices at about 10s. 3d. to 10s. 6d. per lb.

**BENZALDEHYDE (0.03)** is offered at cheaper rates with dealers quoting in the region of 2s. 9d., and a shade cheaper for quantities.

**BENZOIC ACID.**—There is no change from last week's report. Material practically free from chlorine (about 0.03 per cent.) is firm at 3s. 6d. per lb. British B.P. is quoted at 2s. to 2s. 3d. per lb.

**BENZONAPHTHOL** is quoted at about 3s. 6d. per lb., but something less would be taken for good business; market dull.

**BETANAPHTHOL (RESUBLIMED).**—Dealers quote at 3s. per lb., but any sales would be on a slightly easier level.

**BROMIDES.**—A general review of the market here and news to hand from Germany show there is little change to report on the week. The Convention continues in force, and much of the cheap material which disturbed the position some few weeks ago seems to have been taken up. Opinion rather favours slightly firmer conditions to come: ammonium, about 2s. 3½d. to 2s. 4d. per lb.; potassium, B.P. crystals and granular, 1s. 10½d. to 1s. 10¾d. per lb.; sodium, B.P. crystals and granular, about 1s. 11d. per lb.

**CALCIUM LACTATE** continues to be quoted by British makers at 1s. 3d. to 1s. 6d. per lb., according to quantity, with dealers' prices for foreign material rather higher.

**CAFFEINE.**—Pure crystals is quoted by dealers at from 11s. 6d. to 12s. per lb.

**CHLORAL HYDRATE** is very steady, and fair business continues to be done with dealers' prices for spot duty-paid crystals at about 3s. 5d. to 3s. 7d. per lb.

**CITRIC ACID (B.P. crystals)** remains flat, and the position is not at all hopeful for the near future. Quotations are in the region of 1s. 3d. per lb., less 5 per cent., but orders could no doubt be placed at a lower figure for important business.

**CREOSOTE (B.P.)** continues steady with importers quoting 2s. 1d. to 2s. 2d. per lb.

**CREOSOTE CARBONATE**, although quiet, seems quite steady at 6s. 6d. to 6s. 9d. per lb.

GUAIACOL CARBONATE is quoted by British makers down to 6s. 3d. per lb. Market dull.

HEXAMINE.—Rather better conditions are recorded, and most of the cheap offers have been taken off the market. Very few offers are now under 2s. 4d., and for a good free-running crystal (foreign) the price is firm at 2s. 5d. per lb.

HYDROQUINONE is easier at from 4s. 1½d. to 4s. 4d. per lb.

LACTIC ACID (B.P.) is steady at about 2s. 6d. per lb., with technical, 50 per cent. by weight, at £42 per ton net; market quiet.

LANOLINE.—Anhydrous B.P. is quoted at from 6d. to 6½d. per lb.

METHYL SALICYLATE.—Dealers' prices for quantities are now at about 1s. 6½d. to 1s. 7d. per lb. in carboys, and 2s. in 5-lb. bottles. British makers' prices are from 1s. 5½d. to 1s. 8d. per lb., with a tendency to advance.

METHYL SULPHONAL is very unsteady at from 17s. to 17s. 3d. per lb. Business negligible.

MILK SUGAR is about 2s. to 3s. per cwt. cheaper, Dutch (B.P.) powder offering at from 74s. to 75s. American is not quoted.

PARAFORMALDEHYDE (100 per cent. powder) is steadier, and most spot holders are now asking near 1s. 9d. per lb. for small parcels.

PARALDEHYDE continues unchanged with business moderate: 1s. 2d. to 1s. 4d. per lb., according to quantity and packing.

PHENACETIN appears to be rather firmer this week, and very few offers are below 4s. 3d. per lb. Most of the cheaper offers have been taken off the market.

PHENAZONE.—The price f.o.b. the Continent is now at about 4s. 6d. per lb. This makes the spot position rather better at about 6s. 1½d. to 6s. 3d. per lb. for quantities, and up to 6s. 4d. for small lots.

PHENOLPHTHALEIN is in free supply, while business is not brisk. Prices run from 4s. to 4s. 4d. per lb.

POTASSIUM PERMANGANATE (B.P.) continues steady with dealers' prices from about 8d. per lb., in drums.

RESORCIN is unchanged with British makers quoting down to 3s. 10½d. per lb. for quantities. Dealers' prices run from 4s. to 4s. 2d. per lb.

SALICYLIC ACID (B.P.).—Dealers' prices are at about 1s. 4d. per lb. and a shade less for big quantities, while British makers' prices run from 1s. 3½d. to 1s. 5d. ex works. Technical, 10½d. to 11d. per lb., ex works.

SODIUM BENZOATE from British makers is quoted at about 1s. 10½d. to 2s. 2d. per lb., with dealers offering Continental free from chlorine at 2s. 2½d. to 2s. 3d. per lb.

SODIUM SALICYLATE.—There is no change to report; business is fair, but competition between British makers continues keen. Dealers' prices are: B.P. crystals, 2s. 1d. to 2s. 2d. per lb. Powder, about 2s. British makers: B.P. powder, 1s. 10d. to 2s.; crystals, 1s. 11d. to 2s. 1d. per lb., ex works.

TANNIC ACID.—B.P. *leviss* is quoted by British makers at about 2s. 8d. to 2s. 9d. per lb. on a quiet market. Dealers' prices rather dearer.

TARTARIC ACID.—Foreign is quoted at about 11½d. per lb., less 5 per cent., ex wharf, in large lots to come forward, which figure is also quoted for spot parcels.

THYMOL is offered by British makers cheaply at about 12s. 6d. to 13s. 6d. per lb.

THEOBROMINE.—Pure crystals is quoted at from 12s. to 12s. 6d. per lb., and theobromine sodium salicylate at 8s. per lb.

VANILLIN (100 per cent. from cloves) is subjected to keen competition between British makers and dealers, with their prices running about level at 21s. 6d. to 22s. 3d. per lb.

Among the arrivals of chemicals (with their values) which have paid Key Industry duty are the following:—Amidopyrin, £695; ammonium bromide, £194; aspirin, £196; bromides, £731; butyl alcohol, £1,936; caffeine, £328; chrysarobin, £224; ethyl malonate, £216; hydroquinone, £145; hydroxide, £283; nickel hydroxide, £566; perfumery synthetic, £119; phenacetin, £1,344; pyrazoline, £495; quinine ethyl carbonate, £127; undescribed chemicals, £3,450.

## Industrial Chemicals, etc.

London, September 23.

BUSINESS in heavy chemicals continues fairly good under present industrial conditions and the market maintains a generally steady tone. Cornish arsenic is very flat. Formaldehyde is showing a little improvement. Lead products are again dearer.

ACETIC ACID has been moving fairly well in small quantities with prices unchanged and steady: 80 per cent. technical, £38; 80 per cent. pure, £39 per ton, in barrels; glacial, pharmaceutical, 99 to 100 per cent., £66 5s. per ton, in glass demijohns; glacial, in barrels, £55 per ton, ex wharf.

ACETONE is firm, with business quite good and prices well maintained at £74 12s. 6d. to £75 per ton for B.G.S., in drums.

ALUM is rather dull, with the spot value of lump, in casks, at about £9 and upwards per ton. Prices for quantities to come forward are cheaper than this.

AMMONIA (ANHYDROUS).—The spot demand for small lots continues, with prices steady at about 1s. 3½d. per lb. for 99.95 per cent., in loaned cylinders.

AMMONIUM CHLORIDE (grey galvanising) is cheaper, with dealers offering in the region of £25 10s. per ton spot, and cheaper to come forward.

ARSENIC.—There is no improvement to record. The quotation for Cornish white powdered, f.o.r. mines, is weak at £17 10s. per ton. America is offering c.i.f. at about £17 5s. There are no offers at the moment from Japan. Stocks are considerable in all markets.

BARIUM CHLORIDE (98 to 100 per cent. prime white crystals).—Spot is offering at about £9 2s. 6d. per ton, while forward quotations are at lower prices.

BARYTES shows no change, with importers quoting at £3 5s. to £5 15s. per ton c.i.f., according to quality and quantity.

BLEACHING POWDER.—Spot prices are about £9 7s. 6d., and forward shipment from the Continent about £8 5s. c.i.f. British makers quote at £9 10s. per ton, f.o.r. works, for 35 to 37 per cent. available chlorine.

BROMINE.—Pure, in bottles in cases, is quoted at from 1s. 6d. to 1s. 7d. per lb.

CREAM OF TARTAR is meeting with a small demand, and prices to arrive run from 75s. to 78s. per cwt., less 2½ per cent., according to quantity.

COBALT OXIDE.—There has been a distinctly active demand for some few weeks past, and makers are now quoting about 8s. 10d. for grey and 8s. for black material. Fair quantities have been wanted for export to the Continent. Cobalt metal has remained at 10s.

COPPER SULPHATE.—There has been a fair export demand, but the trend of prices is no better, while makers are faced with well-sustained Continental competition. The larger makers quote £24 15s. to £25 a ton for casks, f.o.b., but business is placeable down to £24 10s.

EPSOM SALT is quiet, with commercial quality at about £4 2s. 6d. to £4 5s. spot; to arrive, about £4 per ton, ex wharf.

FORMALDEHYDE seems to show more life, and prices are slightly steadier in the region of £39 10s. per ton, ex wharf, for 40 per cent. by volume.

GLAUBER'S SALT remains dull, with commercial quality quoted at about £3 10s. to £3 12s. 6d. per ton, in bags; cheaper for quantities to arrive.

LEAD PRODUCTS.—Dealers' prices show a further advance on account of higher prices of metal: red lead, £44; white, dry, £44; in oil, ground, £46 per ton, c.i.f. London; lead acetate, spot, brown, £42 10s.; white, £43 10s. per ton.

LITHOPONE has been moving fairly well and prices are a shade firmer at £20 to £20 10s. per ton for 30 per cent. Continental red seal.

OXALIC ACID has been quiet again at about 3½d. per lb.

POTASH CAUSTIC is very steady, with the spot price for 88 to 92 per cent. solid in drums at £29 per ton, and slightly cheaper for quantities to come forward.

POTASSIUM CARBONATE is steady, but business has sagged lately: 90 to 92 per cent., £24 7s. 6d. to £24 10s.; 96 to 98 per cent., is scarce, £26 10s. per ton, spot, ex wharf.

POTASSIUM CHLORATE shows no change, with spot at about 3½d. per lb., ex wharf, and quotations for shipment at about 3½d. per lb.

POTASSIUM PERMANGANATE (commercial quality).—Dealers are now quoting down to 5½d. per lb., in drums, for very large quantities, and 5½d. to 6d. per lb. for ordinary lots.

POTASSIUM PRUSSATE.—Yellow is steady on a moderately active market as quoted close up to 7½d. per lb., ex wharf.

SAL AMMONIAC has been in limited request only during the week, but the market is unchanged and steady: dor-tooth crystals, £33; medium, £30 10s.; fine white crystals, £21 1's. per ton, spot, in casks; cheaper prices for quantities to arrive.

SALTCAKE from British makers for home trade is quoted at £3 15s. per ton, in bulk, delivered.

SODIUM ACETATE remains in slow demand, with prices, ex store, about £18 2s. 6d. per ton for quantities.

SODIUM HYPOSULPHITE shows no change, and business has been fair: pea crystals, photographic, £13 10s. per ton, in one-cwt. kegs; commercial lump, £9 per ton, in casks, ex wharf. British makers' prices for pure crystals, £14 to £15 per ton, according to quantity, delivered to buyer's station.

SODIUM NITRATE remains very quiet in London: 96 per cent., about £12 5s.; refined, about £12 10s. per ton, f.o.r. docks. Liverpool prices, 2s. 6d. per ton less.

SODIUM NITRITE (100 per cent. basis) is flat, with the London docks' price about £22 5s. to £22 10s. per ton.

SODIUM PRUSSATE has been moving fairly well, with British at about 4d. per lb.

SODIUM SULPHIDE.—The demand remains poor: 60 to 62 per cent. solid, about £11 12s. 6d., and broken about £12 12s. 6d. per ton, in drums, ex wharf.

COAL-TAR PRODUCTS, ETC.—There is no material change to report in this section. Business has been quiet. Carbolie acid crystals are quoted unchanged on a quiet market, and a better demand would probably bring higher values. Pitch remains flat. ANILINE OIL has been in more request for home purposes and prices are up to 7½d. to 7½d. per lb., in loaded drums, carriage paid. ANILINE SALT is quoted at 7d. to 7½d. per lb., naked, ex works, by British makers. BETANAPHTHOL has shown much more business of late for home trade, with prices at about 1s. delivered. TOLUOL is moderately active, with prices steady: pure, 1s. 10½d. to 2s.; 90's, 1s. 8d. per gallon. XYLOL is neglected: pure, 3s. 3d.; commercial, 1s. 10½d. to 2s. per gallon. CARBOLIC ACID crystals have been subdued during the last week or two after the recent revival of business, but prices seem fairly steady at about 4½d. per lb., f.o.b., in bulk quantities. A more active market would probably mean higher rates. Crude 60's, 1s. 3d. to 1s. 4d. per gallon. CRESYLIC ACID (97 to 99 per cent.) is rather easier at about 1s. 5d. to 1s. 6½d. per gallon; market quiet. NAPHTHALENE continues dull, with dealers offering flakes at £13 per ton, ex wharf, and crystals at £10 10s. to £11 per ton. Pure METHYL ALCOHOL continues steady at about £47 per ton, ex wharf, for small lots; cheaper prices for quantities to come forward. PYRIDINE shows no change, with the market quotation in the region of 19s. 6d. to 20s. per gallon. PITCH.—This important market remains flat, with the quotation at 39s. 6d. per ton, f.o.b. East Coast.

#### Fixed Oils, etc.

PALM OILS show up brighter at slightly higher rates. Most other items have been quiet all the week, but prices show little change. American turpentine continues to advance. ACID OILS.—Market steady at slightly cheaper prices: Coconut and palm kernel, 41s. 3d.; groundnut, 37s. 6d.; soya, 34s. 6d. spot. CASTOR.—Market still dull and easy: pharmaceutical, 60s.; first pressings, 55s.; second pressings, 53s. spot, in barrels in not less than one-ton lots. COCONUT is quiet at unchanged rates: deodorised, spot, 53s., Ceylon, 45s. 6d., c.i.f.; Cochin, 65s., e.i.f. COTTON.—Market quiet and easier: deodorised, 52s.; common edible, 50s.; soap-making, 48s. 6d.; crude, 43s., spot. GROUNDNUT.—Market dull and cheaper: deodorised, spot, 57s.; crude Oriental, 51s., c.i.f. PALM KERNEL is quiet: deodorised, about 50s.; crude, 44s. 6d., spot. PALM.—Rather higher prices are quoted and the market is firmer, with business better: Lagos, 42s.; softs, 41s. 9d.; mediums, 40s. 9d.; hards, 40s. 6d.; bleached, 44s. 3d., spot. RAPE is firm and unchanged: refined, 55s.; crude, 52s., spot. SOYA is steady at about level rates: deodorised, spot, 49s. 6d.; crude, to arrive, 45s. LINSEED OIL has improved in tone, but the home trade demand is not very active. The outlook is rather firmer, chiefly in sympathy with the better demand experienced of late for the seed at hardening rates. The position of crushers is none too satisfactory, while the outlet for cakes is now rather poor. On spot, 40s. 6d.; October-December, 39s. 7½d.; January-April, 39s. 7½d. Hull: on spot, 40s. 1½d.; October-December, 39s. 7½d.; January-April, 39s. 6d. TURPENTINE has fluctuated very considerably lately, while after another advance in the American markets prices there reacted moderately. At this end speculative buying for January-April was inclined to develop further, but the general demand has been checked by a reactionary feeling and buyers are moving cautiously, although the fact may be pointed out that London terms for some little time have remained at rather below American parity. Last week's deliveries amounted to 1,565 barrels, making the total since January 1 68,185 barrels, compared with 70,961 barrels for the same period last year. The stocks were returned at 30,935 barrels, which, together with the large quantities landing and the parcels afloat, made the visible supply 55,870 barrels, as against 43,771 barrels at the same date in 1924. The latest advices from Savannah stated that current receipts were well cleared. On spot, 79s.; October-December,

79s. 9d.; January-April, 82s. WOOD.—Hankow, in barrels, on spot, remains quiet at 64s. per cwt.

LUBRICATING, MINERAL AND BURNING OILS, ETC.—In some directions, such as solvent naphthas, business has been bright, but generally the market has remained quiet, with values showing but little change. BENZOL continues steady, with a fair volume of business being done: crude 65's, 1s. 3d.; standard motor, 1s. 8d.; pure, 1s. 11d. per gallon, ex works in tank wagons. FUEL OIL.—Market continues steady with business quiet: 950 gravity, £4 2s. 6d.; 890 gravity, £4 17s. 6d. per ton, ex tank. PARAFFIN WAX AND SCALE.—Moderate business only; quoted prices about the same: wax, 3½d. to 5d. per lb., according to melting point, in bags; scale is firmer and tends to advance still higher: quoted at about 27s. 9d. to 28s. per cwt., c.i.f. U.K. port. PARAFFIN OILS.—American oils are unchanged: standard white, 1s.; water white, 1s. 1d. per gallon, barrels included; Russian prime white kerosene, 6½d. to 7d., ex tank; 7½d. buyers' barrels filled free, and 10½d. per gallon, barrels free, ex wharf, London. WHITE OILS.—This market remains quiet and prices are again a shade easier for some grades: special No. 1, £28 15s.; No. 1, £26 15s.; No. 2, £24 7s. 6d.; No. 3 half-white, £23 12s. 6d.; No. 4 half-white, barely £18 per ton, drums and barrels free, ex wharf, London. SOLVENT NAPHTHAS.—Business has been good for 90 to 160, with prices up to 1s. 5d. to 1s. 6d. per gallon; heavy 90 to 190, 1s. to 1s. 0½d. per gallon. LUBRICATING OILS.—The spot position remains quiet and rather easy as quoted: pales, £11 7s. 6d. to £25 7s. 6d.; reds, £13 10s. to £25 10s.; dark cylinders, £13 10s. to £35; filtered cylinders, £21 5s. to £35 per ton, less 2½ per cent., ex wharf, London. SOLUBLE OILS AND CUTTING COMPOUNDS, £20 to £23 per ton, according to grade. No. 1 RUSSIAN OIL is steady at £18 5s. per ton, less 2½ per cent.

#### London Drug Auctions

Commercial Sale Rooms, Mincing Lane, E.C.3,  
September 24.

A MODERATE quantity of drugs offered to-day, for which the demand showed a decided improvement on the previous sale two months ago. Cape aloes, buchu, benzoin, and dragon's blood were neglected. Cardamoms sold at a further advance of 2d. to 3d. per lb., and ordinary Ceylon seed brought extremely high prices. Cassia fistula was steady, while ohomomiles sold cheaply. Chillies brought low prices for wormy Japanese. Eucalyptus oil brought dearer rates, and for honey prices were from 2s. to 3s., higher compared with the last auction values. Matto Grosso ipecacuanha sold at much higher rates, and the market is still in rising tendency. Good natural Levant liquorice root sold cheaply: myrrh was neglected, and rhubarb met with a retail sale. Grey Jamaica sarsaparilla sold cheaply, but for native Jamaica full prices were paid. Common Alexandrian senna leaf went at a low price, and for bees' wax there was little demand. The following table shows the quantity of goods offered and sold, the asterisk denoting private sales.

	Offered	Sold		Offered	Sold
Aconite root (Jp.)	10	0	Citronella oil (Jv.)	6	0
Agar agar	2	0	Colocynth	10	0
Agaric	15	0	Cubebs	7	0
Ajowan seed	40	0	Cuttlefish bone	116	0
Aloes—			Dragon's blood	77	0
Cape	119	0	Elemi (cs.)	9	0
Zanzibar	6	0	Eucalyptus oil	17	17
Ambergris (oz.)	77	0	Euphorbia pil.	15	0
Ammoniacum (cs.)	55	0	Farina	2	0
Anise (Spanish)	25	0	Fennel seed	50	0
Anatto seed	92	20*	Gambier	1	1
Araroba	20	10*	Gamboge	5	0
Areca	67	0	Gentian, cut	10	0
Arnica root	2	0	Gingergrass oil (pois)	2	0
Asafetida	12	0	Gualacum	52	2
Balsam tolu	15	2	Gum acacia (Ghatti)	18	0
Belladonna root	115	0	Gum aceroides	58	0
Benzoin—			Gum, East African	23	0
Siam	17	0	Honey—		
Sumatra	242	1	Australian	40	0
Bilberries	14	0	Californian	100	0
Buchu	84	2	Cuban	11	4
Calamus root	25	0	Hawaiian	310	0
Calumba	248	0	Hayti	24	3
Camphor oil (dms.)	21	19	Jamaica	768	90
Camphor tabs. (cs.)	5	0	Mexican	25	0
Canella alba	2	0	St. Lucia	59	8
Cannab, Ind.—			San Domingo	148	16
African	41	0	Trinidad	2	0
Bombay	4	0	Ipecacuanha—		
Cardamoms	223	53	Matto Grosso	25	13
Cascara sagrada	351	0	Jaborandi leaves	25	0
Cascarilla	5	0	Jambul seed	5	0
Cassia	5	5	Kino (Afr.)	12	0
Cashew nuts	8	8	Kola	66	15
Cassia fistula	77	20	Lavender flowers	39	0
Chamomiles	35	5	Liquorice juice	25	5
Chillies	527	340	Liquorice root	265	0
Cinchona	80	0	Mastich	5	0

	Offered	Sold		Offered	Sold
Menthol (cs.)	2	0	Senega	4	2*
Mint oil (Jp.)	3	0	Senna and pods—		
Myrrh	84	3	Alex.	85	41
Nux vomica	92	20	Tinnevely	362	40
Olibanum	225	0	Soap nuts	29	0
Orris (Mor.)	23	0	Sponge (bls.)	4	0
Palmarosa oil (pots)	1	0	Stramonium	8	0
Patchouli oil (tins)	2	0	Strophanthus	8	0
Peppermint oil			Styrax (cs.)	20	0
(Amer.) (cs.)	3	0	Tonka beans	33	2*
Podophyllum root	92	0	Tragacanth	21	0
Quince seed	15	0	Turmeric	70	0
Red Peru bark (bgs.)	77	0	Turtle dried	4	2
Rhapontica root (Ch.)	58	0	Valerian root (Peru)	1	1
Rhubarb (Ch.)	79	10	Wax (bees')—		
Rose petals and buds	13	0	Benguela	25	0
Sage leaves	6	0	East African	234	3
Salep	2	0	Jamaica	9	0
Sarsaparilla—			Morocco	10	0
Grey Jamaica	27	18	Wax, berry	22	0
Mexican	9	0	Wax, Carnauba	24	0
Native Jam.	7	2	Witch hazel leaves	6	0

**ALOES.**—Several small lots of Zanzibar in skins were offered, and for good hard liver in skins £3 to £8 10s. per cwt. was wanted. Cape also failed to sell, fair seconds, slightly coarse, being obtainable at 42s. 6d., and common to ordinary dull and drossy at 37s. to 40s. per cwt. 15 cases Cape were limited at 40s. to 42s. 6d. for ordinary dull seconds.

**ARECA.**—A lot of 67 bags, fair Ceylon, partly wormy, was offered and bought in at 52s. 6d. per cwt.

**BALSAM TOLU.**—A lot of 15 cases offered, of which 2 cases fair hard sold at 4s. 9d. per lb.

**BELLADONNA ROOT.**—For five bales fair clean (0.39 per cent. alkaloid by U.S.P. ix test), 40s. per cwt. was wanted.

**BENZONIN** was quite neglected, a single case of middling Sumatra seconds selling at £7 per cwt. Small to bold selected loose Siam almonds were limited at £28 for the best lots, and pea and bean size at £22.

**BUCHU.**—A single bale of good fair green round slightly stalky sold at 2s. 4d. per lb., and a single bale had been sold privately; clean green ovals were limited at 2s. 3d., bronzy at 2s. to 2s. 2d., stalky longs at 2s. 2d. to 2s. 3d. per lb.

**CAMPHOR.**—Five cases Japanese refined ( $\frac{1}{4}$  oz. tablets) were offered and bought in at 3s. 6d. per lb., 3s. 9d. being wanted.

**CAMPHOR OIL.**—A lot of five drums white essential offered, of which three had been sold privately, 52s. 6d. per cwt. being wanted for the remainder; 16 drums white sold without reserve at 49s. per cwt.

**CANELA ALBA.**—For two bales of this scarce West Indian bark 2s. 3d. per lb. was wanted.

**CANNABIS INDICA.**—Two cases good Bombay tops were limited at 22s. 6d. per lb., and a further two cases at 23s. 6d. Seventeen bags African siftings were held at 2s. 6d., and 20 bags stalky at 2s. 6d.

**CARDAMOMS** met with a good demand at an advance of from 2d. to 3d. per lb., the sales comprising Ceylon-Mysore, good bold pale, 8s. 2d. to 8s. 5d.; bold and medium pale, 7s. 7d. to 8s.; medium, 6s. 6d. to 7s. 3d.; small, 5s. 10d. to 6s.; badly clipped, 5s. 3d.; bold splits, 7s. 10d.; medium, 7s. 1d. to 7s. 7d.; small splits and pickings, 5s. 3d. to 5s. 5d. One case pale Ceylon seed sold at 8s. 10d., and for good Bombay seed 9s. is asked privately. Ceylon-Malabar, medium brownish, were bought in at 6s. 3d. to 6s. 4d., and small at 6s. 1d.

**CASCARA SAGRADA.**—A lot of 76 bags fair thin 1922 peel were offered, and bought in at 130s., and 100 bags thick coarse 1924 peel were also bought in at 60s. per cwt.

**CASCARILLA.**—Five hags small partly dusty and stringy were limited at 3s. 9d. per lb.

**CASEIN.**—Five bags sold at 25s. per cwt.

**CASHEW NUTS.**—A lot of eight bags, badly weevilled, sold without reserve at 11s. per cwt.

**CHAMOMILES.**—A lot of five bales good white old crop sold cheaply at 95s. per cwt. gross for net. Thirty bales of dull brownish old crop were held at 85s.

**COLOCYNTH.**—A parcel of ten cases Syrian offered, of which six consisted of good pale whole apple, for which 1s. 9d. was wanted, and four cases broken yellowish apple were bought in at 1s. 2d. per lb.

**CUBEBS.**—Several parcels of fair were limited at from £9 10s. to £10 per cwt.

**EUCALYPTUS OIL.**—A parcel of 17 cases with rusty tins, containing B.P. 75 per cent. cineol, sold at 1s. 8½d. per lb.

**GAMBOGE** is becoming scarcer. Two cases Siam pipe of good orange fracture, slightly blocky, were limited at £19 per cwt., and for similar quality in another interest £19 5s. to £19 10s. was wanted.

**GENTIAN.**—Ten bags cut were offered, and retired at 45s. per cwt. gross for net.

**GUAIACUM** was offered in quantity, but quality was mostly ordinary drossy block, two cases of which sold at 1s. 6d. per lb.; fair was limited at 1s. 10d. to 2s.

**GUM ACCROIDES.**—A lot of 58 bags Australian block was offered and bought in at 60s. per cwt., the limit being 55s.

**HONEY** met with a somewhat disappointing demand, considering the good business which has been done privately at firmer prices. The rates paid in auction were 2s. to 3s. higher than the previous sale. The chief sales were of Jamaica, of which about 100 packages (part privately) were sold, comprising white set 55s., palish to pale set 46s. to 55s., cream set 52s. 6d., light brownish to brown set 43s. to 50s., darkish amber setting 40s. Eight packages St. Lucia sold; dark brown amber liquid 40s.; of Cuban four packages whitish set sold at 45s., and of Hayti three dark sugary set sold at 40s. Of San Domingo, 16 sold privately for good white and pale set; the value of this quality is 50s. to 55s. per cwt.

**IPECACUANHA.**—Matto Grosso was much dearer, and of the 23 bales offered 13 sold, comprising fair bright leanish at 10s. per lb., and ordinary lean stemmy natural at 9s. 2d. to 9s. 3d.; good bright root was firmly held at 12s. per lb. Owing to small stocks the market has still a rising tendency.

**KOLA.**—A lot of 31 bags dullish small to medium Jamaica halves and wholes were bought in at 2½d. per lb. A case of fair Trinidad sold at 1½d. per lb. 18 bags Ceylon were held at 2½d. for good bold halves; 14 bags wormy West African sold without reserve at ¾d. per lb.

**LAVERAND FLOWERS.**—A lot of 39 bags was offered without reserve, but no bid was made, the quality showing no aroma.

**LIQUORICE ROOT.**—A lot of 63 bags common natural was offered and bought in at 13s. per cwt., and a parcel of 135 bales good Levant root in sticks offered, of which 39 bales sold cheaply at 12s. 6d. per cwt. Sixteen bags of bright decorticated root, a trifle woody, were held at 57s. 6d. per cwt., a bid of 55s. being refused.

**MASTICH.**—A lot of five cases fair pale tear was bought in at 2s. 8d. per lb.

**MENTHOL.**—Two cases Kolayashi crystals were offered and bought in at 47s. 6d. per lb.

**MINT OIL.**—Three cases dementholised Japanese (Suzuki) were offered and bought in at 25s. per lb.

**MYRRH.**—The quality offered was mostly ordinary mixed Somali sorts, for which from 70s. to 80s. was wanted. Fair, slightly blocky Aden sorts were held at £5 5s. per cwt.

**NUX VOMICA.**—A lot of 48 bags good bright Cochín was limited at 15s. per cwt.; 30 bags good bold bright Bombay sold at 14s. per cwt. subject.

**ORRIS.**—For 23 bags fair leanish Morocco 25s. to 28s. 6d. per cwt. was wanted.

**PEPPERMINT OIL.**—Three cases American ("Wainol" brand) were offered at 60s. per lb., and a bid of 57s. 6d. was refused.

**PODOPHYLLUM ROOT.**—A lot of 31 bags *P. Emodi* was bought in at 80s. per cwt.

**ROSE BUDS.**—A lot of 13 bags Morocco rose buds offered and bought in at 9d. per lb.

**RHUBARB** met with a small sale, including two cases medium to bold rough round High-dried, with three-quarters fair fracture, at 1s. 5d. Three cases medium flat Shensi, part loose and spongy, with two-thirds pinky and one-third dark fracture, sold at 2s. 6d. per lb. without reserve. Medium to bold Shensi was limited at from 3s. to 3s. 3d.

**SARSAPARILLA.**—Grey Jamaica was steady. 16 bales of fair selling at 1s. 5d. per lb., and a further two bales fair in another catalogue sold cheaply at 1s. 2d. per lb. Of native Jamaica, two bales ordinary yellow were limited at 1s. 4d. to 1s. 6d.; one bale of good red sold at 1s. 9d. and one bale fair red at 1s. 7d. Nine bales Mexican were held at 9d. to 10d. per lb.

**SENEGA.**—Four bales offered, of which two had been sold privately, 2s. 8d. being wanted for the remainder.

**SENNA** met with a small sale at steady prices for Tinnevely. A few bales of ordinary small to medium leaf sold at from 2½d. to 3½d. per lb. 12 bales Tinnevely pods had been sold privately, and five bales of dark pods sold at 8d. per lb. A string of 41 packages Alexandrian sold at 5d. for common small to medium brownish and colourless leaf, and 3d. for sea-damaged; siftings sold at 2d. to 2½d. per lb., and sea-damaged at ¼d. to 1½d. per lb.

**STROPHANTHUS.**—For a lot of eight cases brown *Hispidus*, lying in Liverpool, 6d. per lb. was wanted.

**TONKA BEANS.**—Eight cases fair Para were held at 2s. 6d. per lb., at which sales have been made privately; two cases had been disposed of prior to auction. Angostura were limited at 6s. 6d. per lb.

**TURTLE (DRIED).**—Two cases (one part mouldy) sold at 5s. 3d. per lb.

**VALERIAN.**—A sack of Peruvian sold at 10d. per lb.

**WAX, BEES',** was slow of sale. Of Jamaica, nine barrels offered, and bought in at £9 10s. per cwt. for fair brown block. Three bags of good brown Zanzibar block sold at £7 15s. per cwt., and various oddments were disposed of. East African was limited at from £8 to £8 10s. per cwt.



Letters for this section should be written on one side of the paper only. Correspondents may adopt an assumed name for purposes of publication, but must in all cases furnish their real name and address to the Editor.

#### Chemist-Analysts' Institute

SIR,—It gives a feeling of satisfaction to notice that a serious effort is being made to uplift the status of pharmacy in this country, and thus give back to the pharmacist the professional work for which he has qualified. I am referring to the Chemist-Analysts' Institute, who held a general meeting on September 8 at the Royal Society of Arts. To those who have taken up pharmacy as a profession, and are somewhat disappointed that, after all, it is a business only, this new movement must be very welcome. Personally, I wish it good luck, and hope that every pharmacist will do his best to make it a success. The new Institute will be welcomed equally as much by the wholesale as by the retail chemist, since wholesalers' interests are still more closely connected with the progress of real pharmacy.—Yours faithfully,

W. W. PERKINS, PH.C.

Clapham, London, S.W.

#### The Late Mr. Ebenezer Luke

SIR,—I am writing in appreciation of your action in inserting the obituary notice in the *C. & D.*, August 8, concerning the late Mr. Ebenezer George Luke. Mr. Luke was born in Freetown about fifty years ago, and after his education at the High School for boys he was apprenticed at the Government Hospital, where, by dint of perseverance and ambition, he "walked up" to the chief dispensership of that institution. He served in the Cameroons during the great war. This year he was appointed chief dispenser for the walled city of West Africa at Wembley, London, where he died. He was a prominent member of the Wesleyan Methodist Connection in Sierra Leone, taking active part in its welfare, as also being a local preacher. He was a prominent Freemason, having been Past Master of the Freetown Lodge, 1955. Mr. Luke was well known and widely esteemed by a very large circle of friends and acquaintances—Europeans as well as Africans—and his death in London came as a shock to many, and Freetown is the poorer by his death, especially his *confreres* in the drug trade. He leaves a widow (who was present with him in London at the last hour), a son and three daughters to mourn their loss.

Central Pharmacy,

Yours truly,

Freetown, Sa. Leone.

T. C. WOODE.

#### Examiners' Curiosity

SIR,—A candidate, on his return from the recent Qualifying examination, informed me that he and many others were asked by the examiners: (1) Their age; (2) at which school or college they had studied; (3) if they had attempted the examination previously. Are the answers given to these questions to have any effect on the result? If not, why are they asked? It is certain that a number of candidates at recent examinations feel that the above questions ought not to be put by examiners. It may be said that these questions are designed to put the candidate at his ease, but he apparently finds them to have a contrary effect.—Yours faithfully,

PHARMACIST (22/9).

#### Locum Tenens' Pay

SIR,—As one who had the bitter experience of requiring locum work in a past which is now happily buried, I am forcibly reminded of that unhappy period by a belated application for my services through the recommendation of a wholesale house who had inadvertently kept my name on their books. The request to act as dispenser came from an institution under Royal patronage, and was for a period of three weeks outdoor. The pay offered is the regal sum of £4 to £4 15s., "according to the qualifications" of the recipient.

I know that about this period of the year a number of youngish men newly qualified like to take a change of air by accepting locum work at such a low figure, and I am also aware that there are many pharmacists who, needing a holiday, find it hard to pay more, having regard to their own restricted income; but a public institution should surely regard the service of a qualified pharmacist at something higher than the wages paid to a dustman or a tram conductor.

Yours truly,

ETA SIGMA (2/9).

#### New P.A.T.A. Scheme

SIR,—The Proprietary Articles Trade Association, having failed to stop the cutting of so-called protected lines, have now evolved a plan "for dealing drastically with the position," and we are given to understand that if this is not successful the only step remaining is to delete the cut lines from the list. It is not exactly conducive of co-operation with the manufacturers, who in some cases have required considerable persuasion to add their article to the list, to inform them that as the P.A.T.A. are unable to carry out their avowed object of stopping cut prices the article will be crossed off. The part of the report which few pharmacists can understand is the statement that the chemist is unable to compete with these cutters "by reason of his loyalty to the P.A.T.A. and his knowledge that if he breaks away the penalty of the shop list may be enforced." Now why, if it can be enforced on the pharmacist, can it not also be enforced on the draper next door to him on one side and the hairdresser or grocer on the other? The street trader and stall-holder, we know, present difficulties, as they are frequently here to-day and gone to-morrow, are more often than not irresponsible persons, and sometimes get their supplies in ways in which no established firm could afford to do. This does not, however, alter the fact that established shops cut P.A.T.A. lines and can get supplies freely, and I see no reason why the chemist could not do so as well if he wanted to. No, it is his loyalty to the scheme that is the reason for his upholding the prices, very often in the face of keen competition and loss of sales.—Yours truly,

CUTDOWN (26/9).

#### Tour in Touraine

SIR,—In "Xrayser II's" comments (*C. & D.*, September 19, p. 403) on the notes on a "Tour in Touraine," he refers to the inadequate recompense for the pharmacist's time. In this I fully agree with him, particularly with regard to Insurance dispensing work, but I cannot help thinking that it is partly pharmacists' own fault and that the authorities have taken their work at their own estimation. As an instance, I had recently a customer who brought in a family recipe with five or six ingredients to be mixed together, which I priced out according to the *C. & D.* Retail Price List; on telling him the total he informed me that he had paid so much less at another local shop, so I gave him the price of the separate items and added that I had not charged anything for making it up. His reply was, "I should think not indeed." So I inquired if, when he did a piece of work, he only charged for his materials and nothing for his time or labour, use of tools, etc., and he rejoined, "That is different." This appears to be the public attitude to a pharmacist's work. If all pharmacists would charge a proper fee for their time and skill, especially for these home recipes, we should be on a better basis and the public would appreciate our services more.

Yours sincerely,

PHARMACIEN (22/9).

#### Appreciations

Congratulations on the very high standard you maintain with each issue.—G. H. C. (6/8).

I have been on a business trip to Leipzig Fair, and on my return journey I called at the office of the British Embassy in Berlin. While I was waiting in the reception room of the business secretary, you will be glad to learn that among the British journals lying on the desk for inspection there was a recent copy of *THE CHEMIST AND DRUGGIST*.—J. G. J. (18/9).

## Legal Queries

*E. M. U.* (29/6).—The label of the tooth powder does not disclose any ground of liability to medicine-stamp duty.

*Musca* (5/9).—Arsenical fly-papers are in Part II of the Poisons schedule, the reason being that they are prepared with an arsenate, and are not a preparation of arsenic.

*A. P. S.* (15/9).—(1) You can sell preparations containing scheduled poisons to hairdressers for use in their business, but they may not sell them to the public, without infringing the Pharmacy Acts. (2) The address of the Registrar of Business Names is 3 & 4 Clement's Inn, London, W.C.2. The form which has to be filled in gives information as to the particulars required. It costs 5s.

*G. H.* (18/9) has succeeded to her late husband's business and is carrying it on in his name. Must her name be disclosed upon the business stationery? [*"G. H."* must register the business with the Registrar of Business Names, 3 Clement's Inn, Strand, London, W.C.2, and also give her own name in addition to the name under which she trades on all "trade catalogues, trade circulars, showcards and business letters."]

*Myositis* (31/8).—An unqualified person cannot legally carry on the business of a chemist and druggist by employing a qualified chemist in the business. Unqualified persons may not be placed on the Insurance dispensing panel, but the names of a few drug-store proprietors are on the panel for supplying appliances. The Poisons and Pharmacy Act, 1908, provides a simple way for unqualified persons to take a financial interest in the business of a chemist and druggist.

*G. G. H.* (21/8).—The dispensing of animal preparations for treatment, internal or external, by a veterinary surgeon is not included within the Labelling of Poisons Order; such medicines come under the general term "medical prescriptions." It should, of course, be *bona fide* dispensing of medicaments prescribed. Any deviation, which is strictly a sale and not something prescribed, would come under the term "preparations sold," and need properly labelling.

*T. L.* (21/8).—(1) A business carried on under the style you mention must be registered under the Business Names Registration Act. (2) Titles such as "Fever Cure" are dutiable under the Medicine Stamp Acts unless the formula is registered as a "known, admitted and approved" remedy with an appropriate reference on the label. (3) There is no objection to Insurance prescriptions being received at any depot, but the compounded medicine must be delivered or collected from the shop of a qualified chemist. Compounded Insurance prescriptions could not legally be distributed from a drug store.

*G. C. C.* (12/9).—The Dangerous Drugs Act, 1925, which extends the scope of the Dangerous Drugs Act, 1920, to diamorphine preparations of all strengths, does not come into force until an order in Council appoints a day. The date of this depends upon the ratification of the Geneva Convention. There is no possibility of obtaining compensation for any stock of proprietary article containing the drug which may be in stock after the Act comes in force. It would be better for you at once to modify your formula by using a similar drug, such as codeia phosphate, in the meantime disposing of the existing stock as soon as possible so as to prevent loss.

*T. & H.* (8/8).—*The Chemist and Druggist Diary*, 1925, contains a concise statement of the regulations governing the sale of poisons in Great Britain and Ireland. Owing, however, to changes having taken place this year the details given there are not correct in some particulars. We have, however, issued new editions of the *C. & D.* Poisons Cards, No. 1, No. 2, and No. 4, which bring the matter up-to-date. These cards are issued at 1s. each, post free. *The Chemist and Druggist Diary*, 1925, will contain the revised poison schedules and regulations. The Poisons Labelling Order which comes in force on January 1, 1926, was printed in the *C. & D.*, December 13, 1924 (p. 850), and beginning in the *C. & D.* January 31 (p. 155), a series of four articles explained the meaning of the Order.

## Miscellaneous Inquiries

When samples are sent particulars should be supplied to us as to their origin, what they are, what they are used for and how. We do not undertake to analyse and report upon proprietary articles nor to publish supposed formulas for them.

*B. B.* (28/7).—WHITE ANT POISON.—A solution of arsenic in syrup is probably most used for destroying white ants. A newer remedy is chloropicrin vaporised near the haunts of the insects.

*J. L. H.* (Bombay) (29/7).—(1) CONDITION POWDER FOR DOGS.—

Potass. nit.,	
Cort. cinchon.,	
Ferri sulph. exsicc.,	
Antim. sulph.,	
Pulv. zingib.,	
Pulv. anisi ... .. aa.	1 part
Pulv. glycyrrh. ... ..	4 parts

Mix. Ten grains made into a bolus with syrup, to be given twice daily.

(2) DOGS' ALTERATIVE MIXTURE :—

Balsam of sulphur ... ..	1 oz.
Sassafras oil ... ..	1 dr.
Olive oil ... ..	20 oz.

Dose : One teaspoonful night and morning.

*E. P. J.* (31/7).—(1) ANTIPON is supposed to depend upon citric acid for its fat-reducing properties. E. F. Harrison found it to contain 40 grains of citric acid in an ounce of water, coloured probably with cochineal, with the addition of a little methyl orange. (2) A citric acid solution in water decomposes in a short time, owing to the development of a fungus.

*T. R. B.* (31/7).—BAY RUM FORMULA.—*See C. & D.*, August 22, p. 288.

*Student* (1/8).—DOG SHAMPOO POWDERS.—If required for use with warm water, a mixture of coconut oil soap 1 oz. and borax 2 oz. is excellent, about half an ounce being sufficient for well lathering a small dog. The dry powders are generally made of such ingredients as fine pine-wood sawdust and magnesia, being intended for rubbing into the coat and removing afterwards by brushing.

*W. S.* (1/8).—(1) The term we use in the *C. & D.* Price List potassium "metasulphite" is a more correct designation for the chemical commonly known as "metabisulphite." Lapis cariosus or rotten stone, a polishing powder, is a different article from Lapis hibernicus, or Irish slate, which is taken internally and applied externally in bruises. (2) A low grade or light paraffin is best for loosening the carbon deposit in motor-car cylinders. The paraffin is allowed to soak over night, and when the engine is run the next morning the carbon is blown out into the exhaust.

*W. E. W.* (1/8).—CARBOLIC DISINFECTANT.—There are many varieties of carbolic disinfectant, but probably the kind made with a resin soap basis is the most used. It is prepared as follows :—

Dissolve caustic soda (30 per cent.) 30 lb. with heat in water 40 gallons, add gradually ground resin 164 lb., and stir well, and boil until the soap is formed. Then add carbolic acid (30 per cent.) 40 gallons, stir well and allow to cool. The percentage of carbolic acid can be adjusted to requirements.

*F. F. H.* (4/8).—DESTROYING CATERPILLARS.—Lead arsenate is the best wash for fruit trees attacked by caterpillars. It is an insoluble chemical and is employed in suspension with a little treacle to cause it to adhere better to the leaves. To obtain the lead arsenate in as fine a state of division as possible it is prepared in dilute solution. To prepare it dissolve sodium arsenate 4 oz. in water 50 gallons, and lead acetate 12 oz. in water 50 gallons. Mix and add treacle 2 lb. This is used as a spray on the foliage of the fruit trees.

*T. T.* (5/8).—IODISED SALT.—This is prepared by mixing sodium iodide with a pure table salt in the proportion of one in 200,000, or approximately one grain of sodium iodide in 25 lb. of salt. Further details were given in the *C. & D.* of April 18 (p. 594) and May 30 (p. 798).

*F. C.* (4/8).—COMMERCIAL LIQUORICE is suitable as a basis for cough mixtures. It contains a varying proportion of insoluble matter, which should be allowed to subside before the completion of the mixture. The liquorice extract of the pharmacopoeia is more readily soluble in water, as it is prepared by percolation, but it costs more than the best brands of solid liquorice.

*P. R. L.* (5/8).—PHOSPHORUS MOUSE AND RAT PASTE.—

Phosphorus ... ..	90 gr.
Warm water ... ..	2 oz.

Warm gently until melted, then pour on to

Beef dripping ... ..	3 oz.
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Mix and add

Biscuit meal ... ..	9 oz.
Meat extract ... ..	60 gr.

Water, to make a paste.

We have no formula for a powder form phosphorus poison. Phosphorus is not a statutory poison in Great Britain.

*T. S.* (5/8).—PRODUCING MARBLING EFFECTS.—We think the marbling effect on the turnings you send is produced by some such process as is employed by bookbinders to make marble-edges on books, or to marble paper. The colours, which are water-repellent, are in powder form and are floated on a mucilage bath, being made in patterns by combing and similar devices. Then by dipping the pattern is transferred to the paper or the edges of the book. We do not know how the colours were transferred to the round articles you send, but this could no doubt be worked out in practice. A full description of the process of preparing the colours and the bath was given in the *C. & D. Diary*, 1903, p. 211.

*S. P.* (6/8).—The drug ordered in Sir Leonard Rogers' prescription is stovarsol.

*T. B.* (6/8).—There is no objection to combining potass. nit., potass. brom., ext. scillæ, and ext. ipecac. in pills. The extracts will probably be sufficient excipient with the addition of glyc. tracag. If you have any difficulty we shall be glad to advise you further.

*H. N. A.* (7/8).—PROTECTING EYES FROM INTENSE LIGHT.—It has been suggested that cinematograph actors exposed to intense light while the photographs are being taken could protect their eyes by instilling in them a solution of aesculin or quinine, so as to protect the eyes from ultra-violet rays. The film of fluorescent substance would be very small, and we doubt the utility of the suggestion. Eserine solution would contract the pupils and cut off the supply of light to a great extent, but the normal pupil would in the circumstances contract to the utmost without the aid of myotics.

*B. & C.* (7/8).—"Two teaspoonfuls" is the correct direction when it is required that the patient shall take that quantity of medicine. If in measuring the medicine you required the patient to use separate teaspoons you would then write "two teaspoonfuls."

*J. G.* (7/8).—LABEL VARNISH.—White hard spirit varnish diluted with about an equal volume of spirit is best for varnishing labels. The labels must be sized twice and be quite dry before the varnish is used—two coats are required. The size is made by dissolving gelatin 1 oz. in water 20 oz., or a few gelatin lozenges can be dissolved in a little water in a small evaporating basin.

*H. M.* (8/8).—DISPENSING PROPRIETARY MEDICINES.—The price to charge for a proprietary article in dispensing is the face value. If the dispensing involves work such as washing off labels, writing and adding another label and entering in prescription book, the article might come under the nominal dispensing fee of 6d. It is not, however, always policy to add anything to face value.

*Medicus* (8/8).—TREATMENT OF RINGWORM.—Ringworm in its various forms is a difficult skin disease to treat. In simple cases the application may be tried of (1) glycerine of carbolic acid, (2) sulphurous acid, (3) formaldehyde, (4) liq. iodi, (5) liq. ferri fort., (6) resorcin sij., tr. benz. co. ad 3j., (7) ung. hyd. iod. rub., (8) ung. potass. sulphurat., (9) ung. sulph. Some cases last for months, and require treating with x-rays.

*R. C.* (8/8).—BAY RUM.—You will find a formula for this preparation, made with industrial alcohol, and containing the necessary denaturants, in the *C. & D.*, May 9, p. 696.

*Ignoramus* (8/8).—SQUILL is poisonous to mice and rats, as these vermin are particularly susceptible to scillitoxin. A liquid extract is made with a menstruum of glycerin 25 vols., acetic acid  $2\frac{1}{2}$  vols., distilled water to 100 vols. This is used to soak the bait used for attracting the animals. There is no difference in the activity of the red and white squill; the latter is preferred in pharmacy, as it produces light-coloured galenicals. The red squill is commoner, and cheaper than the white variety.

*D. P.* (8/8).—FILM DEVELOPING.—Pyrogallol is the more correct chemical name for pyrogallic acid. The "rods of spoons" referred to in the reply to a correspondent in the *C. & D.*, August 1, p. 198, each consist of three or four widths of films and twelve full rods (say, sixty spoons), are a batch for tanks of 45-gallon capacity. Smaller tanks (three gallons and ten gallons) are used where the scale of work does not permit the large ones to be used. The British Photographic Association, Sicilian House, Southampton Row, London, W.C.1, publish a guide to the subject, and, we think, would send you a copy on request.

*Sigma* (10/8).—CLEANING MARBLE TOMBSTONE.—Vegetable matter such as lichens are best removed by a solution of caustic soda (6 oz. to a gallon of water). This is applied by means of a cheap scrubbing brush provided with a handle, so as to avoid wetting the hands with the caustic solution. After the solution has acted for ten minutes, wash the marble with water, rubbing if necessary with very fine sand to remove the lichen in case it has not been completely dissolved by the soda. Finish the cleaning with plenty of clean water. If not very much discoloured it may be found that soft soap, washing soda and hot water will be sufficient. Avoid the use of acids, as although these clean the marble, they render the surface rough and more acceptable to vegetable growths.

*J. W.* (Johannesburg) (12/8).—(1) CROCEIN B. is the sodium salt of benzene-azo-benzene-azo- $\alpha$ -naphthol-4:8-disulphonic acid. It is a well-known aniline dye with the British Colour Index number 251. (2) COMPRESSED YEAST.—You do not say where you have failed in your attempts to produce compressed yeast. None of these preparations keep long, especially in a warm climate. The manufacture is a matter of centrifuging the yeast to remove as much moisture as possible and then mixing with starch to absorb the residue and keep the tablet dry.

## Retrospect of Fifty Years Ago

Reprinted from  
"The Chemist and Druggist," September 15, 1875

### Preservation of Infusions

Infusions spoil because of infinitesimally small germs, which, floating in every breath of air, find a suitable condition in the infusions for their further development. Keep these germs out and the infusions will be stable. I was shown a year ago some watery infusions which by a very simple plan had been kept unchanged for several years. I immediately adopted it. By merely putting a strained infusion into common four, six, or eight-ounce bottles, and allowing these to reach a boiling temperature in a water-bath, and plugging the necks with a bit of cotton wool, not over tight, I have always a perfectly good infusion to use. Those of gentian, orange-peel, and rose I have kept in this way for months. If I wish to avoid the second heating, I put the ingredients into hot water in a bottle with a rather wide neck, and placing this in a water-bath bring it to a boiling temperature as quickly as possible, take it out, and plug the neck with cotton wool as before. The only precaution besides those I have mentioned is to avoid allowing the plug of cotton wool to become wetted with the infusion. I was really ashamed that I had known of the filtration of air for so long a period and yet threw away so many remains of infusions which might thus easily have been preserved.



[Commenced C. & D., July 5, 1924]

**Cotton-root Bark.**—The dried bark of the root of *Gossypium herbaceum*, Linn., and other cultivated species of *Gossypium*, occurs in commerce in the form of thin tough fibrous strips or quilled pieces brownish yellow externally with slight longitudinal ridges or meshes, small black, circular dots or short transverse lines, and when the thin cork is abraded showing dull, brownish orange patches. The inner surface is whitish, of a silky lustre and striated. The bast fibres are long, tough and separable in papery layers. It is inodorous, with a faintly astringent and slightly acrid taste. The bark contains a yellowish acid resin to the extent of about eight per cent., which becomes oxidised to a bright reddish brown, and is visible then as minute brownish dots on the separated layers of the bast. It contains dihydrobenzoic acid, salicylic acid, and two substances of a phenolic character. Tannin is said not to occur in it. It is used chiefly by herbalists as an emmenagogue and parturient, as it is believed to be more effective and safer than ergot. An infusion of 2 oz. to a pint of boiling water is taken in wineglassful doses.

**Cottonseed Cake.**—London is probably the world's largest market for undecorticated cottonseed cake, which is imported from Egypt, as distinguished from the decorticated, manufactured in the United States, Peru, Brazil, and Argentina. The undecorticated cake, which takes its name from the fact that the hulls of the cottonseed are not extracted, is in large demand in Great Britain, where its smaller percentage of albuminoids and fats (the two constituting about 28 per cent. of the total) is much more desirable in the feeding of cattle than the decorticated cake, which contains approximately from 50 to 52 per cent. of albuminoids and fat. Egyptian cotton cake is largely sold under certain trade marks, of which "ESS," "Crescent," and "K-Z" are the principal. The brands are guaranteed by the manufacturer, and have a stable content of about 5 per cent. oil and 23 per cent. albuminoids. They have become so well known in the London market that the largest part of the trading is done by naming one of the known brands, this constituting, through long usage, a standardised grade. With the fixed albuminoids and fat content all necessity for grading or certification is eliminated. Egyptian cotton cake is packed in bags of unequal capacity, the number required to make up a ton of 2,240 lb. varying from nine to ten. The cake is usually sold on the Corn Exchange, Mark Lane, London, on Mondays, Wednesdays, and Fridays, by private contract. The proceedings are regulated by the London Cattle Food Trade Association, Lime Street Square, London, which formulates rules for the regulation of the trade and settles disputes by arbitration.

**Cotton-Wool, Commerce.**—For retail sale, cotton-wool is packed in paper or in cartons in net weight rolls of 1 oz., 2 oz., 3 oz., 4 oz., 6 oz., 8 oz., and 1 lb. When ordered on a National Health Insurance prescription, it must conform to the standards of the British Pharmaceutical Codex (see Cotton Wool, Standards), and be supplied to the patient completely wrapped and sealed as received from the wholesaler. Care should be taken in the storage of cotton wool, as overheating is likely to affect its absorbency, while similar deterioration takes place with age. For this reason some manufacturers put a date on all wool sent out.

**Cotton Wool, Fire Danger.**—To eliminate the risk of cotton wool catching fire when it is used for decorative purposes, e.g., to represent snow in a window display, it is advisable first to immerse the wool in one of the fire-proofing solutions and dry it. Sodium tungstate,

sodium phosphate and ammonium salts form the base of fire-proofing preparations, several recipes for which are given in "Pharmaceutical Formulas."

**Cotton Wool, Manufacture.**—Absorbent cotton-wool is usually made from a grade of cotton known as "linters," consisting of short cotton fibres, residue of the ginning process of separating the seed from the fibre. The material arrives in this country in bales, and is first passed through a willowing machine which removes a great portion of the shell and chip and prepares the material for washing, bleaching and rendering antiseptic. The washing is carried out by putting the cotton in a solution of caustic soda and passing steam under pressure into the solution, thus removing the wax and other impurities. The fibres are afterwards bleached with a solution of chlorinated lime and soaped, which is decomposed with dilute acid. Bleaching causes a loss of 10 to 15 per cent. in weight, and reduces the breaking strain from seventy to about fifty-five. The liberated fatty acids remain fixed on the fibres, and it is the presence of these acids which causes the wool to crackle when rubbed between the fingers. The amount of these acids, calculated as stearic acid, in commercial absorbent cotton wool varies from 0.115 to 0.75 per cent. The process of soaping is necessary for the preparation of fat-free cotton. Untreated cotton contains 0.6 per cent. of wax and oil, which interferes with the absorbency that wool should possess. The next process involves opening, mixing (unless a pure original cotton is being worked) and scutching, in the course of which the short fibres, dust and coarse particles are removed, to prepare the material for carding. There are firms who specialise in washing and bleaching, and supply the material which has been through these processes. The function of the carding-engine is to comb the material, so that the fibres are laid parallel to each other. On leaving this machine it is in a thin web or fleece, and layer on layer is added until the desired thickness is attained. For convenience in handling absorbent cotton wool is put up in a roll, usually with a sheet of paper between the windings. To accomplish this a wadding or winding machine is used, the sides of which are adjustable, and rolls can be made up to any diameter. The final operation is to cut the rolls into suitable lengths for retail.

**Cotton Wool, Source.**—Cotton consists of the hairs of the seeds of various species of *Gossypium*, of which *G. barbadense* and *G. hirsutum* are the chief sources, and the bulk of the world's supplies are obtained from plants grown in the United States and Egypt. On ripening, the seed pods, or bolls, burst, and the fibres are picked either by machinery or by hand. The cotton then undergoes a process known as ginning, in order to remove the seeds, and is then pressed into bales of about 400 lb. each for shipment. It is from the residue of the ginning process that the bulk of absorbent cotton wool is manufactured (q.v.).

**Cotton Wool, Standards and Tests.**—The desirable qualities of cotton wool are length and regularity of staple, fineness, lustre, softness, strength and good colour. The average length of staple, according to the standard of absorbent cotton wool adopted by the British Pharmaceutical Codex (absorbent is only a relative term) must be at least five-eighths of an inch. The wool should be reasonably free from dust; a thin layer held up to the light should be seen nearly free from neps; and the ash should be not more than 0.5 per cent. When compressed to a volume of 20 mils. and dropped into a beaker of distilled water at 15°C, 1 gm. of absorbent cotton wool should sink readily. A sample of B.P.C. cotton wool has been deposited at the Testing House of the Manchester Chamber of Commerce, and is to be used as a standard in connection with the testing of dispensing scheme of the Ministry of Health. It should not be overlooked, however, that the absorbency of cotton wool deteriorates with age—sometimes after a few months only—so that unless the standard sample is renewed from time to time, erroneous results are likely to be obtained. On account of the loss of absorbency, care should be taken not to overstock with cotton wool. The length of staple may be measured by taking the average length of a dozen fibres extended by means of tweezers



## The C.&D. Commercial Compendium

Courts have, with a few exceptions, jurisdiction to deal with all personal actions, whether arising out of contract or tort. Moreover, County Courts have power to grant all the remedies that can be obtained in the High Court, and provided that the subject matter of the actions is within their jurisdiction, they can grant specific performance of an agreement or an injunction where that is an appropriate remedy. In actions affecting land and house property the County Courts have jurisdiction when neither the value nor the rent exceeds £100 a year. In actions relating to the administration of the estate of a deceased person or the execution of trusts the jurisdiction is restricted to cases in which the value of the estate does not exceed £500. Proceedings to foreclose or otherwise enforce a claim under a mortgage or charge not exceeding £500, and actions for dissolution of partnership where the assets are not more than that sum, may be brought in the County Court. Under certain statutes special jurisdiction is given to County Courts to deal with a particular class of cases. For example, claims under the Employers' Liability Act, 1880, and the Workmen's Compensation Act, 1906, are heard in the County Courts exclusively and without limit as to the amount claimed. Similarly, County Courts have exclusive jurisdiction under the Pharmacy Acts, 1852 and 1868, to hear proceedings for the recovery of penalties for the improper use of the title pharmaceutical chemist, or for the improper sale of poisons. If both parties signify their approval in writing, an action which would otherwise have to be brought in the High Court may be taken in the County Court. On the other hand, a County Court has no jurisdiction in any action for libel, slander, seduction, or breach of promise of marriage. A County Court action may be brought in the Court of the district in which the defendant either resides or carries on business at the time the action is commenced, failing which it may but only with the leave of the Court—be brought in the Court of the district in which the defendant resided or carried on business within six months before the commencement of the action, or in which the cause of action wholly or in part arose. Actions in a County Court may be commenced either by an ordinary summons or by a default summons. As a rule, the former procedure is the simpler, and, for that reason, it is the more usual. The great advantage of a default summons is that it is more expeditious in cases where a defence is improbable. If the defendant fails to give notice, within eight days, that he intends to defend the action judgment may be obtained immediately. In the case of a default summons, however, the preliminary procedure is more complicated than in the case of an ordinary summons. The claim must be verified by affidavit, the summons must be served upon the defendant personally, and application—supported by affidavit—for leave to issue the summons is necessary in certain circumstances in which an ordinary summons may be issued without the leave of the Court.

**Court Plaster.**—The function of court plaster, originally ornamental, is now to protect wounded skin. It is sometimes stated to be medicated with arnica or calendula, but unless definitely recommended as a cure is not liable to medicine-stamp duty.

**Covenants: Definition.**—A covenant is in strictness an agreement under seal by which the parties to the instrument or some of them are bound to do or to abstain from doing something, or by which they undertake that a certain state of affairs exists. No particular words are required, and, indeed, a covenant may be implied by law even where there are no express words in the instrument creating it. Wherever the intention of the parties to a deed is that a thing is to be done or not to be done, a covenant is implied. Thus, where a lease was entered into containing a covenant by the lessee that he would take coals from the lessor, a covenant was also implied that the lessor would supply the coals to the lessee. And in the case of a sale of the property in a proprietary medicine, it was held that there was an implied covenant by the vendor that he would not make and sell the medicine after the sale.

Although no particular words need be used in a covenant, the use of certain words sometimes implies covenants by the persons using them. Thus, if a person in conveying property describes himself as conveying as "beneficial owner," the law implies that he thereby covenants that he has a legal right to convey, that the person to whom he conveys shall have quiet enjoyment of the property, and that it is free from any incumbrance not disclosed at the time of sale. In some cases it is important that the covenant should be expressed. Suppose an agent is employed under an agreement by which he is to be paid a certain commission for a fixed time, there is no implied covenant that the employer shall continue to carry on the business for that time. But the agent would have a remedy if the employer had covenanted to employ him during the time. Where parties enter into mutual covenants one with another, a question arises whether one can sue on the covenant in his own favour without showing that he has performed or offered to perform his covenant. The general rule is that if the covenants are mutual and independent, either party can sue the other without showing that he has himself performed his covenant. It is otherwise where the covenants are so dependent that the performance of the one depends upon the performance of the other.

**Covenants: Trading Restrictions.**—Covenants in restraint of trade are as a rule opposed to public policy, and therefore void; but they may be allowed to have effect where they are reasonable, that is, where they are so framed and guarded as to afford adequate protection to the party in whose favour the restraint is imposed, and at the same time are not injurious to the public. The covenants are most commonly met with in agreements between the vendors and purchasers of businesses; between employers and persons they are taking into their service; between persons entering into partnerships; and between groups of traders who wish to eliminate unnecessary competition in their trades. The contract containing the restraint may be oral or in writing, subject to the general rule of law that if it cannot be performed within a year it cannot be enforced unless it is evidenced by writing. The contract, even when under seal, must be founded on consideration, although our Courts will not consider the adequacy of the consideration, provided it is real and of some value. Further, the restraint must be reasonable in the interests of both the contracting parties. As to this, it has to be noted that the tendency which once prevailed to attempt to fix hard and fast rules for settling what is reasonable has been abandoned, and the House of Lords has recently laid down that the Courts would merely treat the question of time and space as one of the elements by which they would measure the reasonableness of the restriction taken as a whole. And in an agreement in which some only of the restrictive covenants are unreasonable, the Courts may sever and give effect to those that are reasonable, though they will not make a new agreement for parties. In the case of sales of businesses, the object, of course, is to secure to the purchaser the goodwill which he has purchased, and covenants to secure this are given effect to. Thus, where a manufacturing chemist sold his business and covenanted not to enter into "business competition" with the buyer into whose services he entered as assistant, the Court held that the covenant was good, and that it was not limited to the time during which the seller was in the service of the buyer, nor to the articles traded in at the time the business was sold. It is common in sales of businesses for the seller to covenant that he will not carry on nor be interested in a similar business within a specified area. Such a covenant is not broken if his wife *bona fide* carries on such a business in the area. And a person is not held to carry on or be interested in or concerned in a business within an area by merely acting outside for a person carrying on such business within. Restrictive covenants entered into by employees with their employers are more strictly scanned. In a recent case it was stated that "an employer is not entitled by a covenant taken from

# The C.&D. Commercial Compendium

his employee to protect himself after the employment has ceased against his former servant's competition *per se*, although a purchaser of goodwill is entitled to protect himself against such competition on the part of the vendor." But whatever the benefit may be of a covenant in restraint of trade between an employer and an employee, if the employer sells his business to a third party the benefit of the covenant passes with the goodwill of the business. It may be noted that, even without any restrictive covenant, if a person sells the goodwill of a business, he is not at liberty to solicit the old customers of the business. The law allows wholesale and retail merchants to agree whereby the retailers are bound not to sell certain goods below certain specified prices, and that if they sell to the trade they are to obtain a similar agreement from any retailer whom they supply. On the other hand, a contract by which mineral water manufacturers bound themselves not to sell mineral waters less than a certain price was held to be unenforceable on the ground that there was no consideration for it. Where, as is common, a person covenants that he will not do the act under a certain penalty to be forfeited if he does, he cannot get out of the covenant by paying over the amount of the penalty.

**Cowhage**, or *Dolichos pruriens*, consists of the short brittle hairs which grow on the pods of *Mucuna pruriens*, a genus of plants of the order Leguminosae, growing wild in Bengal and other parts of India, also Africa and South America. There is only a small demand for the commercial drug, which is obtained solely from India. It occurs as a yellowish brown loosely pelted mass of hairs, with occasional small black portions of the pericarp. Cowhage produces an intense irritation of the skin, and its action as a vermifuge is purely mechanical.

**Cream of Tartar, Commerce of.**—The following figures show the exports, re-exports and imports from and to the United Kingdom from 1920 to 1923, together with the countries of origin and destination:—

## Exports

	1920	1921	1922	1923
	Cwt.	Cwt.	Cwt.	Cwt.
Sweden .. .. .	115	20	19	6
Denmark (including Faroe Islands) .. .. .	318	26	36	42
Japan (including Formosa) .. .. .	497	—	80	581
United States .. .. .	456	—	2	—
Other foreign countries .. .. .	415	98	201	230
Total to foreign countries .. .. .	1,801	144	338	859
Value .. .. .	£23,613	1,205	2,215	4,193
Irish Free State* .. .. .	—	—	—	825
Union of South Africa .. .. .	267	89	434	514
British India .. .. .	195	38	20	35
Australia .. .. .	5,199	11,208	25,006	28,057
New Zealand .. .. .	146	162	1,398	3,868
Canada .. .. .	666	365	281	53
Other British Possessions .. .. .	17	47	161	134
Total to British Possessions .. .. .	6,490	11,909	27,300	33,486
Value .. .. .	£80,108	98,693	148,509	158,355
Total Cwt. .. .. .	8,291	12,053	27,638	24,345
Value .. .. .	£103,721	99,898	150,724	162,548

## Imports

	1920	1921	1922	1923
	Cwt.	Cwt.	Cwt.	Cwt.
Germany .. .. .	1,052	2,259	5,167	2,914
Netherlands .. .. .	279	565	8,382	13,023
France .. .. .	22,114	3,450	3,957	12,475
Portugal .. .. .	1,929	1,528	1,139	392
Spain .. .. .	21,261	8,096	1,954	5,512
Italy .. .. .	5,047	9,089	7,199	4,351
Greece .. .. .	340	—	—	—
United States .. .. .	770	—	16	40
Other foreign countries .. .. .	671	390	406	1,957
Total from foreign countries .. .. .	53,463	25,377	28,220	40,664
Total from Brit. Possessions .. .. .	—	82	20	10
Total .. .. .	53,463	25,459	28,240	40,674
Value .. .. .	£653,103	174,907	136,864	171,638

The following are imports entered in transit on through bills of lading:—

	1920	1921	1922	1923
Cwt. .. .. .	12,802	678	550	2,641
Value .. .. .	£178,482	5,994	2,564	11,418

## Re-exports

	1920	1921	1922	1923
	Cwt.	Cwt.	Cwt.	Cwt.
Sweden .. .. .	200	62	—	—
Denmark (including Faroe Islands) .. .. .	38	26	33	37
France .. .. .	309	69	178	143
Japan (including Formosa) .. .. .	442	20	—	—
United States .. .. .	300	—	—	459
Other foreign countries .. .. .	271	34	58	195
Total to foreign countries .. .. .	1,560	211	269	834
Value .. .. .	£21,891	1,871	2,453	3,724
Irish Free State* .. .. .	—	—	—	1,012
Union of South Africa .. .. .	702	123	216	907
Australia: .. .. .				
Victoria .. .. .	6,333	305	1	1
New South Wales .. .. .	6,165	23	185	—
Queensland .. .. .	2,089	125	—	—
Other States .. .. .	1,607	202	15	30
New Zealand .. .. .	2,592	568	70	12
Canada .. .. .	802	438	370	2,197
Other Brit. Possessions .. .. .	209	77	99	141
Total to British Possessions .. .. .	20,499	1,861	956	4,300
Value .. .. .	£288,560	14,279	5,792	21,180
Total .. .. .	22,059	2,072	1,225	5,134
Value .. .. .	£310,451	16,150	8,245	24,904

\* From April 1, 1923.

**Credit.**—The amount of goods or cash for which one person is indebted to another, and for which he is trusted to pay.

**Credit, Giving.**—The system of giving credit in pharmacy is fairly common, and presents many dangers. The essential condition is confidence in one's judgment or estimation of the character and standing of the person to whom credit is given. Public bodies or institutions are always safe, though oftentimes they take long credit: repudiation of liability seldom, if ever, takes place. Credit is part of the functioning of public bodies, which depend on finance committees for the sanction of payment. Where difficulties chiefly arise is in individuals, generally newcomers in a district. It is customary in many cases in which large quantities of goods are sold on credit to require a banker's reference. Risk cannot be avoided in credit transactions, and due provision is generally made for bad debts in the annual auditing of accounts. The points calling for judgment are ability to pay and willingness to pay. There is in addition the proviso of what to do in cases of failure (*see Debt Collection*). The weakness of the seller is usually his desire to sell the goods, and where overcaution is in evidence, it leads to loss of business. The nice balance depends largely upon experience of human nature. No satisfactory rule can be laid down. It is necessary in the case of credit being given to a married woman, or persons under age, to know who is liable for payment. In every case it is a wise precaution to make reasonably sure from all the evidence available that not only is the character of the person to whom credit is given above reproach, but also that there is the ability to pay the account when due.

**Credit Note.**—A document received from a person from whom goods have been bought; also, allowance of a claim for goods returned or error admitted in an invoice for goods.

**Creditor.**—A person to whom money is owing.

**Credit Sales.**—Goods sold for which immediate payment is not expected. They are usually made on agreed terms, and the transactions are entered in the day book and debit ledger (*see Bookkeeping*).



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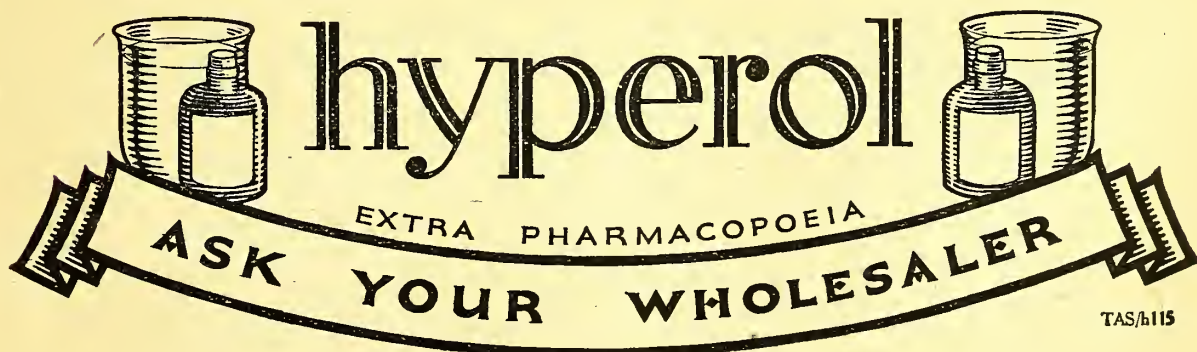
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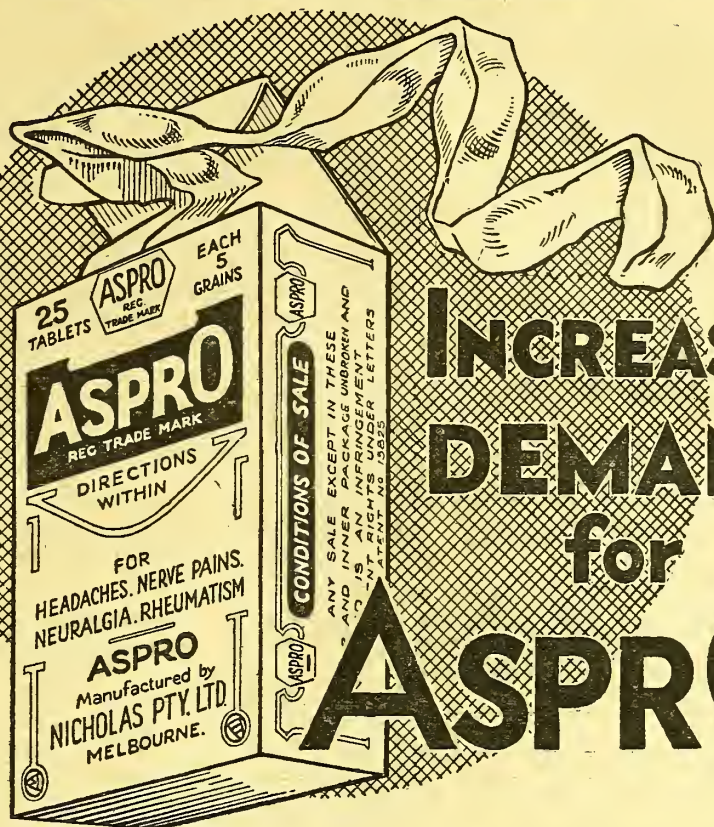


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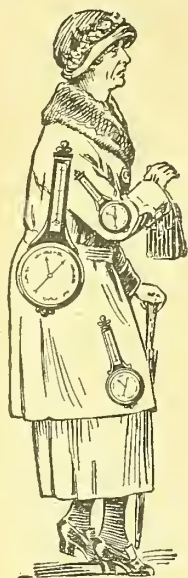
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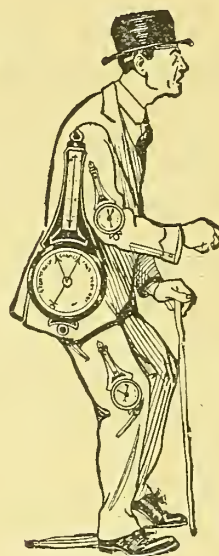
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## POISONS and PHARMACY ACT.

Privy Council Order, Jan. 1, 1921.

## DANGEROUS DRUGS ACT, 1920.

Regulations of May 20, 1921. (Operative Sept. 1, 1921.)

# Dr. J. Collis Browne's CHLORODYNE

is not affected by above Order or Regulations.

**It does not require purchaser's signature.**

**Proprietors: J. T. DAVENPORT, Ltd., 83/87 Union Street, S.E.1.**

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**All Skin Ills**

Germolene is infallible in the treatment of Eczema, Rash, Pimples, rough red skin and Gnat Bites, Tenderness and Irritation.

Caution: The Germolene Ointment, and the Germolene Tablets, must be used as directed. Do not use on the face of children. Do not use on the face of children. Do not use on the face of children.

**SOOTHES AT A TOUCH**

**Germolene**

The Aseptic Skin Dressing

10-inch Double-Column Ad.

## For all Ailments of the Nerves *Supreme & Unrivalled*

GRATEFUL Testimony—genuine—unsolicited and gratuitous, sent without fee or reward, from all classes in every part of the country, proves beyond doubt that Dr. Cassell's Tablets are the Supreme and Unrivalled Tonic for the Nerves, Digestion and Kidneys.

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Dr. Henry Wood, from the Times, 1st March 1904, writes: "I have been a sufferer from nervous debility for many years, and have tried many remedies, but have not found any that have done me so much good as Dr. Cassell's Tablets. I have now been able to do my work as usual, and I am very grateful to you for the remedy."

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11-inch Treble-Column Ad.

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Telegrams:  
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*A High-class Pharmaceutical Preparation  
for sale by Pharmacists only*

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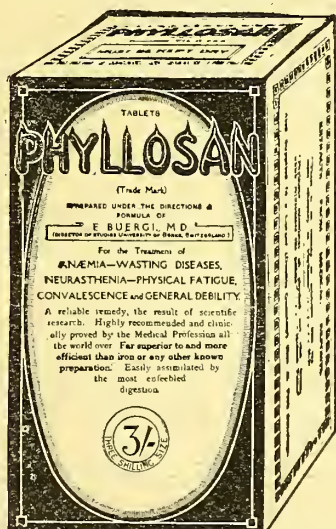
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Prepared under the direction and from the formula of  
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A Preparation possessing the testimony of a mass of responsible scientific and medical evidence. World-wide medical experiments have demonstrated beyond a doubt that Phyllosan will achieve results in Anæmia, Chlorosis and Wasting Diseases (of whatever origin) far superior to and more efficient than iron in any other known preparation. Clinical reports have already appeared in scientific and medical journals all the world over.

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Clarke's Blood Mixture	.. ..	3/- & 12/-	£1:7:0 & £5:8:0
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„ Special Aperient Pills	.. ..	1/3, 3/- & 5/-	11/-, £1:7:0 & £2:4:6
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FREE CASES. Carriage paid upon orders of £100.

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Sole Proprietors:

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1 gallon tins - 11/- per gall.

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In 8-oz. and 16-oz. Bottles, retailing at 3/- and 5/6 (P.A.T.A.)

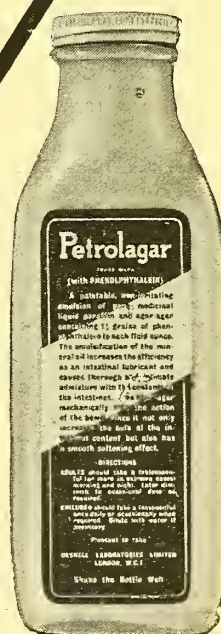
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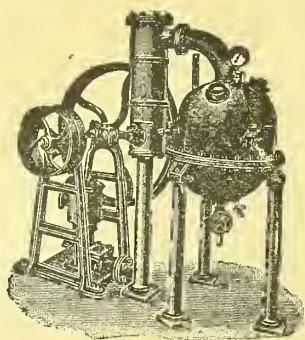
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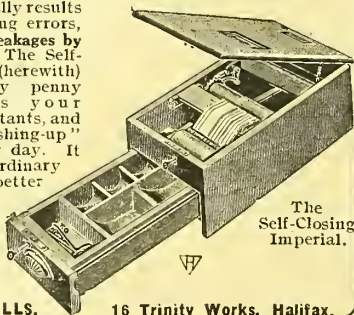
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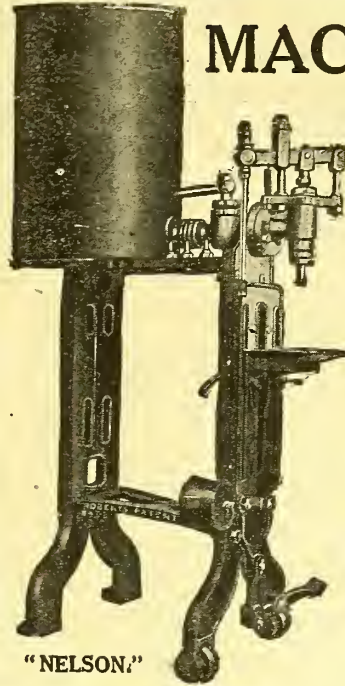
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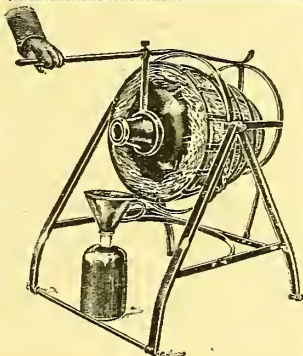
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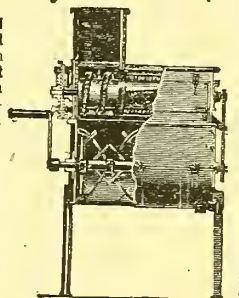
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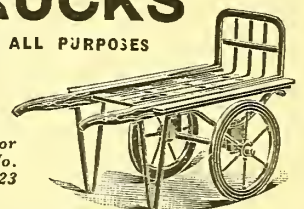
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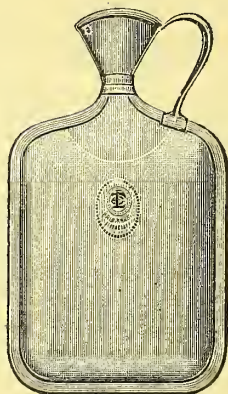
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SEPTEMBER 26, 1925.

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**DERBYSHIRE**.—Old-established Business, with Wine Licence, near Derby; receipts for past three years average £2,300, on lease, or property may be purchased; pleasant district; good house attached; price, valuation of stock and fixtures with moderate goodwill, about £1,650. 85/32, Office of this Paper.

**EAST COAST**.—Owner retiring. Old-established Business in flourishing and delightful watering place; unique position; returns £2,500; long lease; low rent; no multiple drug stores; great opportunity for Optical and Dental Practice; every investigation invited; references required with opening communication; price £1,600. Apply 87/20, Office of this Paper.

**ESSEX**.—Business and Freehold Property for Sale through death of Proprietor; returns, £1,257; could easily be doubled. Apply 72/378, Office of this Paper.

**LANCASHIRE (S.W.)**. (Industrial Centre).—Genuine Chemist's Business, lock-up, good position, densely populated district; returns average £1,850 yearly; very low rent; lease; price £1,600; practically valuation; unlimited scope for increase; positive gold mine; small house available. Also another, Oldham, with full Wine Licence, returning £1,200 yearly; sacrifice £550. Brierley, Chemists' Valuer, 135 Queen Street, Newton Heath, Manchester. ('Phone, Failsworth 113.)

**LIVERPOOL**.—Old-established, good-class Retail and Dispensing Business; Kodak Agency; good living accommodation; pleasant residential neighbourhood; very well-fitted and stocked; Genuine cash buyers can have full particulars upon application to 88/22, Office of this Paper. Property must be bought along with the business.

**LONDON**.—Small, well-equipped Factory and Stocks for Toilet Preparations, Perfumery, etc., for Sale as going concern; £400, or near offer. 72/380, Office of this Paper.

**LONDON, N.**—Working-class district; big scope for N.H.I.; modern fitted, well stocked, shows a handsome profit rental; price only £200; stock and fixtures at valuation. P.C.B., 19/120, Office of this Paper.

**NEAR MANCHESTER**.—For Sale, well-fitted and stocked Chemist Business on main tram route in thickly populated neighbourhood; takings over counter £23 per week, plus 600 Insurance scripts per month; excellent living accommodation; splendid opening for live man; at present under elderly management; vendor is prepared to sell property or grant 15 years' lease. 84/36, Office of this Paper.

**S.E. COAST**.—Good Family Retail and Kodak Business for disposal in main street; living accommodation; back and side entrance; store and photo. workrooms fitted up for D. and P.; modern plant; large shop smartly fitted; modern high-class double front; established 50 years; turnover £3,000 over, and increasing; nearly all cash; net profit at least £800; rent £150, rates £30; will bear every investigation; price, stock and fixtures and a year's net profit, equal to £2,400; cash only; no offers; new lease, 21 years. 87/18, Office of this Paper.

**SOUTH WALES**.—Well-established Chemist's Business; Wine Licence, Kodak Agency, Optics; modern premises, well-fitted and fully stocked; large outside warehouse, commodious house, electric light throughout; genuine concern; on lease, or property can be bought. Further particulars from John Williams, 11 Shirley Road, Roath Park, Cardiff.

**SOUTH YORKSHIRE**.—Old-established Chemist's Business in rapidly increasing colliery district; owner retiring; cash takings well over £3,000, and increasing; no local opposition; freehold house and shop premises £1,000, part of which could remain on mortgage if desired; offers considered. Apply C. W. Nixon, Solicitor, Queen Street Chambers, Sheffield.

**WARWICKSHIRE**.—Unopposed Chemist's Business in nice Agricultural, etc., district, returning £30 weekly and capable of great expansion; lock-up, with pleasant house in immediate vicinity; inclusive rental, shop and house 27s. 6d. weekly clear; price £1,500 about, or £550 for fixtures, goodwill, etc.; stock at valuation; exceptional opportunity. Brierley, Chemists' Valuer, 135 Queen Street, Newton Heath, Manchester. ('Phone, Failsworth 115.)

**WEST OF ENGLAND**.—Business for sale; main road, busy thoroughfare; modern stock; handsomely fitted; very low rent; Kodak Agency; long lease; good living accommodation; unlimited scope for energetic man; price £2,700. 87/22, Office of this Paper.

**EXCELLENT** little Business doing £1,000 per annum, easily doubled under personal control, in important Derbyshire (village) newly fitted; lock-up; main road corner; price £500. 72/371, Office of this Paper.

**EXCELLENT** opportunity for one or two to buy privately sound Business, with c11 and large Agricultural connection in good Northern market town, having £1,200 net profit; shop large, well fitted; exceptionally commodious business premises, held on lease; low rent; option to purchase. Only applicants furnishing references of having £5,200 at command will be replied to. Apply 72/377, Office of this Paper.

**FOR** disposal, Drug and General Stores in Midlands; main road; two shops; no opposition; splendid opportunity for qualified Chemist; could add N.H.I.; at present under female management; present hands 11 years; average weekly takings £22; could easily be doubled; immediate possession; six rooms, garage; good reasons for disposal; price £350, including goodwill, stock, etc., etc.; genuine business. 83/37, Office of this Paper.

**OLD-ESTABLISHED** Business in South-East London for disposal; good-class Dispensing and Prescribing; sale of own Proprietaries, also Kodak Agency; house attached with side and back entrances. For further particulars apply "Opportunity," P.C.B., 19/14, Office of this Paper.

**SPLENDID** chance for beginner. Chemist-Dentist giving up Chemist Business in busy market colliery town near Doncaster; modern fitted pharmacy; electric, etc.; lock-up; double-fronted shop; stock and fixtures at valuation, about £700. 78/35, Office of this Paper.

**BUSINESSES WANTED.**

**ADVERTISER** seeks genuine Cash Drug Stores, with light Retail, in healthy locality; live on premises; small or neglected not objected to if really scope; particulars in strict confidence; no agents. "Statim," 86/18, Office of this Paper.

**DISINFECTANT** Works wanted, London; going concern preferred. Write "Disinfectant," 195 Oxford Street, W.1.

**WANTED**, sound Business, Hull or Leeds district preferred, with turnover about £30 to £40; must bear investigation. Particulars (in confidence) to 85/21, Office of this Paper.

**FOR SALE.**

**GENUINE BARGAIN**.—Fittings, complete; suit shop 12 ft. x 14½ ft.; hard wood, mahogany stained, seasoned, and in perfect condition, including wall and upright cases, counters with drawers, nests of drawers with lockers, scales, cash register, etc.; twelve separate items; cost £77; price, cash down £35 (or offer); on view by appointment. Replies, 86/39, Office of this Paper.

**MECHANICAL** Clown for Sale; works from electric light without attention; displays 20 signs; moves eyes, eyebrows and mouth in lifelike manner; is a splendid attraction; vendor obtaining fresh device; first offer £10. P.C.B. 18/270, Office of this Paper.

**NATIONAL CASH REGISTER**, as new, £95 model. 2 drawers, registers £1 19s. 11½d.; what offers? Kershaw, 49 Hainault Road, Leytonstone.

## PARTNERSHIPS.

**PARTNER** with capital required by Wood Finish Manufacturers; preference given to one with technical knowledge. Write, stating full particulars, to 83/36, Office of this Paper.

## AGENCIES.

6s. for 50 words or less; 6d. for every additional 10 words or less, prepaid.

**MANUFACTURERS' Agent**, established in London 17 years, doing business entirely with Wholesale Druggists' Sundriesmen, Hairdressers' Sundriesmen, Surgical Supply Houses, and Shippers to all parts, desires an additional Sole London Agency from actual manufacturers of standard goods, such as Surgical Dressings, Bottles, Toilet Goods, etc., etc. P.C.B. 17/5, Office of this Paper.

**REPRESENTATIVE**, age 40, travelling by car through the Eastern and Southern Counties, and having a personal connection of many years, is open to accept a first-class Agency on a commission basis; no travelling expenses are asked for, but any business proposed must be sound and reputable. 63/1, Office of this Paper.

**REPRESENTATIVE**.—Well-known Pharmacist Salesman, travelling by car, Lancs, Potteries and Midlands, having personal connection with best buyers, is open to consider representation of a firm of repute on this ground, or would be prepared to consider one of two first-class Agencies. Replies in confidence to "Car," 87/36, Office of this Paper.

**SELLING Agents** required for South of England and South Wales, also Yorkshire and four Northern Counties, by manufacturers of well-known Toilet Preparation. Apply, stating area covered, other lines carried, and terms required, to 71/367, Office of this Paper.

**WANTED**, by Wholesale Chemist with good connection in Yorkshire and Lancs, Christmas Novelties of any kind, Buying Agency or on commission. Apply "West Riding," 87/3, Office of this Paper.

## PREMISES TO LET.

**CHEMISTS**.—Grand opening for a high-class Dispensing Chemist in handsome parade of new shops, busy main road position, at Golders Green, where multiple traders are establishing themselves; huge popular and rapidly-growing residential district where immediate success is assured; fine shop frontage, 19 ft. by depth of 52 ft.; residential flat over; contribution towards fitting front will be made by owners to ensure good style; an exceptional opportunity for an ambitious firm or private individual; to be let on lease. Apply Sole Agents, Leslie Raymond, F.S.I., F.A.I., The Estate Offices, Golders Green, N.W.11. (Telephone: Speedwell 1601, 3 lines.)

## SITUATIONS OPEN.

### RETAIL.

### [HOME.]

6s. for 40 words or less; 6d. for every additional 10 words or less, prepaid.

**CARDIFF**.—Junior Assistant required of smart appearance and a capable Salesman. Apply, stating fullest particulars, with photo, Duck & Son, St. John's Square.

**CHESHIRE**.—Wanted at once, Junior or Improver; well up in Counter work, Dispensing and Window-dressing, no Photographic; unqualified; outdoors. State age, height, salary required, photo and references, to Grice, Chemist, Nantwich.

**CITY**.—Young, experienced Assistant required in high-class City Business, not necessarily qualified, but good Counterman and Photographic knowledge essential; easy hours. Apply by letter, with full details of experience, etc. Rex & Co. (Chemists), Ltd., 32 Ludgate Hill, E.C.4.

**CUMBERLAND**.—Wanted, Junior Assistant (male); general mixed business. State salary, etc. 84/21, Office of this Paper.

**DEVON (NORTH)**.—Immediately, Unqualified Assistant for General Retail, Veterinary and N.H.I. Dispensing. Applicants must please send photo (to be returned) and state fully experience, height, age and salary required (outdoors) in first letter, to Dyson, Chemist, Barnstaple.

## PHOTOGRAPHS, TESTIMONIALS, &c.

When answering advertisements in this section applicants are strongly advised not to send (unless specially requested) ORIGINAL TESTIMONIALS or VALUABLE PHOTOGRAPHS. As can be readily understood, when an advertiser receives from 60 to 100 replies the task of returning photographs, testimonials, &c., is one of some difficulty.

**EASTBOURNE**.—Qualified Assistant (single) required for Dispensing and Photographic business; must be good Dispenser and Counter hand. Apply, giving full particulars, age, height, salary required (outdoor), references, photograph (will be returned), also when disengaged, to Procter, 5 Station Parade.

**HINDHEAD AND HASLEMERE**.—Two Junior Assistants, unqualified, are required; must be well up in Dispensing and accustomed to good-class business. Please send particulars of experience and salary required to R. C. Harrison, Beacon Hill, Hindhead.

**LIVERPOOL**.—Junior Assistant, unqualified, with good experience as Dispenser, Counterman and Window-dresser. Full particulars and salary required to 87/25, Office of this Paper.

**LONDON**.—Qualified Assistant, young, energetic, capable; Photographic experience. Send full particulars, including age and salary required; photo if possible. 87/9, Office of this Paper.

**LONDON, CITY**.—Qualified Assistant (young) required at once; brisk Counter and good-class Dispensing. Personal interview preferred; if writing give full particulars, references, and salary required. D. C. Jones, 21 Aldgate (City), London.

**LONDON, N.**—Wanted, smart Junior (outdoors). Apply by letter, giving full particulars of previous experience, age, height, salary required, when disengaged. Page's Drug Stores, Ltd., 203 Hertford Road, Lower Edmonton.

**LONDON, N.**—Capable Junior (lady or gent.) for a good-class Dispensing and Retail business. Personal application or letter (with photo), stating full particulars of experience, age, salary (outdoors). T. J. Morris, M.P.S., F.S.M.C., 20, St. James' Parade, Muswell Hill, N.

**LONDON, N.**—Wanted, Unqualified Man, about 24; good-class Retail and Dispensing business; comfortable indoor berth; personal application preferred; if by letter, give full particulars and salary required; applications unacknowledged in four days respectfully declined. David Anderson, 21 Broadway Parade, Crouch End, N.8.

**LONDON, N.W.**—Wanted, gentlemanly Junior Assistant; unqualified; outdoors; Dispensing and Counter experience essential. Personal interview if possible, or full particulars with photo. C. A. Noble, 110 Mill Lane, N.W.6.

**LONDON, N.W.**—Experienced Assistant; good appearance and address; well up in Dispensing and good-class Counter work; highest references essential. Apply, stating age, experience and salary required, 88/25, Office of this Paper.

**LONDON, S.E.**—Qualified Chemist wanted for middle October as Manager for Branch Shop; Retail and Dispensing Business; must be energetic, chibling and tactful Salesman and good Window-dresser; permanency to right man. State age, height, experience, salary required. 88/6, Office of this Paper.

**LONDON, W.**—Experienced unqualified Assistant required; must be good Dispenser and Counterman. Apply, with full particulars, height, age, references and salary required, to 86/11, Office of this Paper.

**LONDON, W.1**.—Wanted, smart Manager for West-End Dispensing Business; accustomed to deal with West-End specialists; must have had similar experience; good salary and commission for first-class man. Apply by letter, giving full particulars of experience, etc., 87/33, Office of this Paper.

**MANCHESTER**.—A gentlemanly Assistant required for the Retail Counter of a high-class city business; good experience essential. State age and salary expected to 86/55, Office of this Paper.

**MIDLANDS**.—Qualified Branch Manager (male) for modern business in pleasant suburb; house available. Full particulars to 85/25, Office of this Paper.

**NORTH WALES**.—Qualified Assistant wanted for N.W. health resort; married; experienced in all branches. State age, experience, height and salary required; enclose photo; permanency for right man. Apply 85/35, Office of this Paper.

**OXFORD**.—Experienced Assistant, unqualified, required for Dispensing, Counter, Photographic, and General Retail; must be a quick and accurate Dispenser. State fullest particulars as to experience, age, height and salary in first letter, to Rose, Chemist, Bullingdon Road, Oxford.

**S**OUTH COAST.—Qualified gentlemanly Assistant for good-class Light Retail with Photography; preference given to gentleman possessing Optical qualification also; this is a comfortable, permanent, and progressive position for the right man. Please give full particulars, including age, height and salary required, in first letter. "Belgravia," 87/24, Office of this Paper.

**W**OLSTANTON, STOKE-ON-TRENT.—Fully qualified Manager required for Chemist and Druggists' business to be opened shortly in good-class district; must be a capable all-round man. G. R. Wood & Son, 137 Newcastle Street, Burslem, Stoke-on-Trent.

**A** YOUNG qualified Assistant for good-class Retail and Dispensing. Usual particulars and salary required to Prebble & Bone, Chislehurst.

**A**T once, capable Assistant for good-class Retail, Dispensing, and Photographic business. Age, height, and salary required to Wilson Hill, Pharmacist, Westgate-on-Sea, Kent.

**A**SSISTANT, unqualified, of good general experience and reliable Dispenser, for middle October. State age, salary required (indoors), and give references to J. Cooper, 107 London Street, Reading.

**A**SSISTANT wanted in a Light Retail and Dispensing business. Apply, with fullest particulars, to Jabez A. Jones, 2 Four Elms Road, Cardiff.

**A**SSISTANT, not over 25, for middle-class Pharmacy, with Counter and Dispensing experience. Fullest particulars in first letter, with photo, when disengaged. Fry, 137 Albert Road, Southsea.

**B**RANCH Manager wanted; general business, with N.H.I. Dispensing; must be quick and obliging; man with knowledge of Optics preferred. Full particulars to D. Davies, 344 Caledonian Road, London, N.1.

**C**HEMIST, qualified, required for East London Pharmacy as Cover; the position would suit elderly gentleman desiring an easy berth with very light duties, or might suit Chemist desiring part-time berth. Applicants must state age and salary required in first letter, and must apply by letter only. "Chemist," 4 Handel Street, Brunswick Square, London, W.C.

**C**HEMIST-OPTICIAN, holding both diplomas, for working-class district. Apply, stating salary required, P.C.B. 19/121, Office of this Paper.

**D**ISPENSER (male), qualified, required immediately, if possible, in a good-class Dispensing Business; good Dispensing experience essential. Apply, giving full particulars as to references, experience, age, height and salary required (outdoors), to Hunt & Co., Pharmaceutical Chemists, 45 High Street, Winchester.

**E**XPERIENCED qualified Assistant to take charge of Dispensing and Manufacture of Galenicals and Stock Preparations; also a little book-keeping; occasional shop duties, chiefly on alternate Sundays. Apply by letter only in first instance, stating references, salary, etc. Prebble, Chemist, Kensington, Liverpool.

**F**RANK LESLIE (CHEMISTS), LTD., Catford, London, S.E.6, have a vacancy for an unqualified Junior Counter Assistant. Applicants should give full particulars as to age, height, names of previous employers, and salary expected.

**F**INDLAY & SONS, Newport, Mon., require smart Junior, unqualified, for quick Retail; N.H.I.; good knowledge of Photography and good Window-dresser. References, salary required, and all particulars first letter.

**I**MPROVER or Junior Assistant (male) wanted. State references, experience, height, salary required (outdoors), and when disengaged. "North Midlands," 86/5, Office of this Paper.

**J**UNIOR Assistant, unqualified, outdoor, male, wanted at once; Dispensing, Counter and Photographic. Apply, stating age, height and salary required, to Charrington, 17 Market Street, Lichfield.

**J**UNIOR Assistant or Improver. State age, experience, salary, with copies of reference, to Manager, Drug Dept., Co-operative Society, Stockton-on-Tees.

**J**UNIOR Assistant (male) wanted for a good-class business. Apply by letter, with full particulars and salary required (outdoors), to A. B. Higgs, Pharmacist and Optician, Horley, Surrey.

**J**UNIOR (male) Assistant, age about 25, required. Apply, stating experience, salary required, to A. G. Wrench, Chemist, Addiscombe, Croydon.

**J**UNIOR for North London business; excellent opportunity to increase Dispensing, Counter and Photographic experience; give full particulars as to age, height, experience, salary required, when at liberty, references. Vacancy also occurs for an Apprentice, who would receive a sound training. 88/27, Office of this Paper.

**L**ADY Assistant required, Sheffield; accurate, reliable, experienced. References, salary required, and full particulars to 84/38, Office of this Paper.

**L**ADY qualified Assistant (Minor); Light Retail and Dispensing. Apply, giving particulars of age, height, experience, with references, to Clayton, 258 Humberstone Road, Leicester.

**P**ART-TIME, experienced Assistant wanted, two evenings weekly, 5-8 p.m., Wednesdays and Thursdays. Apply Meyrick & Davies, 34 James Street, Oxford Street, W.

**P**HARMACISTS wanted as Managers of new Branches; permanencies and good prospects. Timothy White Co., Ltd., Portsmouth.

**Q**UALIFIED Assistant wanted for quick Cash Retail in S.E. London; no holiday or Sunday duty. Give fullest particulars of experience and salary required. 85/39, Office of this Paper.

**Q**UALIFIED, young, energetic, to manage branch. Experience, references, salary to P.C.B. 18/27, Office of this Paper. (Replies unanswered in four days respectfully declined.)

**Q**UALIFIED Manager wanted for branch; must be courteous, good Salesman, and able to take complete charge; thorough knowledge of Photography; only experienced man need apply; salary and commission; North Midlands. 84/39, Office of this Paper.

**Q**UALIFIED Branch Manager for good-class business with Photography; reliable, energetic man between 30 and 35; rooms if required. Please state age, height, salary, experience, etc. Guest, 129 High Street, Brentwood.

**Q**UALIFIED Assistant; must be a good Dispenser and obliging at the Counter. Please give full particulars and state salary expected to H. E. Graham, Ltd., Chemists, 22 Burlington Street, Bolton.

**Q**UALIFIED Assistant wanted; permanency to good all-round man; married; good house attached to shop; able to take charge in principal's absence. State age, experience, references, photo and salary wanted to Dennis, 113 Adnitt Road, Northampton.

**Q**UALIFIED Junior Assistant wanted by Wavell & Co., 144 Victoria Street, S.W. Apply personally.

**Q**UALIFIED Assistant, Senior, for London, E.C.; working-class. Apply, stating age and salary required, P.C.B. 19/12, Office of this Paper.

**R**ELIABLE, gentlemanly Assistant wanted immediately for a few weeks; age about 30-35; first-class Dispensing experience essential. Apply, with full particulars, giving references and stating salary required (outdoors), to H. & W. Northey, Pharmacists, Maidenhead, Berks.

**R**EQUIRED, Manager, qualified, for busy suburban district; good Window-dresser, tactful Salesman, with sound knowledge of Photography work; permanency for a really useful man. Apply 72/373, Office of this Paper.

**R**EQUIRED.—Lady Dispenser (Hall Cert.) required for Hampton Court and Kingston districts; Counter experience an advantage. Apply 72/374, Office of this Paper.

**S**INGLE, unqualified Assistant, with good Dispensing and all-round experience, for Kent; not over 40. 71/35, Office of this Paper.

**S**MART, active male Assistant, qualified or unqualified, for good high-class Retail and Veterinary business; good Salesman and Window-dresser essential. State age, height, salary (outdoor) in first letter and all particulars to "Iris," 87/17, Office of this Paper.

**S**URGICAL Belts and Corsets.—Competent Fitter and Saleswoman required to take charge of good-class shop in South Coast town; good opportunity for lady with knowledge of business. Write particulars, age, salary required, and references. 88/23, Office of this Paper.

**U**NQUALIFIED Junior Assistant wanted, about October 19, chiefly for Dispensing and Stock. Apply, with full details and salary required (outdoors), to Hilton, Chemist, Bognor.

**U**NQUALIFIED Junior required; good Dispenser and Counter-man; knowledge of Photography. State fullest particulars as to age, experience, and salary required in first letter to Frederick Liner, Chemist, 156 King Street, Gt. Yarmouth.

**W**ANTED, Managing Assistant (either sex) for Herbalist and Drug Store business; must be honest and trustworthy; experienced in Retail Pharmacy, good Prescriber; qualification unnecessary; time for study, books, specimens, reagents available; rough locality. Apply, personally, 1 Heath Street, Barking.

**W**ANTED, an unqualified Assistant (male). Apply, with full particulars, to D. Evans, Chemist, 136 Chepstow Road, Newport, Mon.

**WANTED**, immediately, a smart Junior Assistant; must be a good Counterman, with knowledge of the Photographic trade. Apply Emrys Evans, Rexall Pharmacy, Aberdare.

**WANTED**, October 12, really energetic qualified man to manage a branch business of a "mixed" nature; salary and commission offered as an inducement to good service. State age, height, experience, references, when disengaged, if married, etc., to 84/20, Office of this Paper.

**WANTED**, Unqualified Assistant; must be good Counterman and Salesman, with knowledge of Photography. Atkinson, Chemist, Southend-on-Sea.

**WANTED** (Lady or Gent), with Minor qualification, for N.H.I. Dispensing and Counter; able to take occasional charge; comfortable berth; permanency; progressive salary. Write, giving full particulars, salary, experience, etc. Evans, The Pharmacy, Penrhinwceiber, Glamorganshire.

**YOUNG**, smart, unqualified Assistant required, with knowledge of Photographic trade. State age, experience, salary required, and give references to Shadforth Prescription Service, Ltd., 49 King William Street, London, E.C.4.

### WHOLESALE.

6s. for 40 words or less; 6d. for every additional 10 words or less, prepaid.

The ADVERTISER may if preferred have replies addressed to this Office, and forwarded on payment of an additional charge of 1/-.

**EXPORT**.—Young man, with experience, for Export Department of London Patent and Sundry House; must be a typist and able to work under slight supervision. State experience and salary required, 88/55, Office of this Paper.

**BRUSH** Manufacturers, specialising in Toilet and Paint Brushes, require experienced Representative; liberal terms of remuneration; state age and full particulars of experience and connection; men having own car preferred. Write "P. M.," c/o Streets, 6 Gracechurch Street, London, E.C.3.

**FIRST-CLASS** Salesman, with good connection amongst Chemists, Hairdressers, etc., wanted for Lancashire by manufacturers of attractive Toilet Products; excellent opening for a live man. Apply, in confidence, to 87/26, Office of this Paper.

**EFFICIENT** Shorthand-Typist required immediately in old-established Merchants' Office; one with experience in Essential Oils and Chemicals preferred. Write, giving full particulars and details experience, age, and salary required, to 71/368, Office of this Paper.

**MANUFACTURERS** of well-known Toilet Preparation require Representatives in London area, also South of England. Apply, stating districts covered, other lines carried, and terms required, to 71/366, Office of this Paper.

**REPRESENTATIVE**, with sound knowledge of Toilet business and previous experience on territory, Yorks, Durham, Northumberland; progressive position to efficient salesman; salary, commission, expenses. Apply in first instance, in confidence, to 72/375, Office of this Paper.

**REPRESENTATIVES** £5 to £10 Extra Weekly.—Manufacturers of Poudres Vanore (in sifter box) and Creme Vanore (Eau-de-Cologne), both retailing at 6d., require Representatives for (1) Lancashire and Cheshire, (2) S.W. and W. England; only first-class men with wide connections at present representing good houses need apply. Vanore, Ltd., 4-6 Muswell Hill Road, Highgate, London, N.6.

**SALESMEN**, already calling on Chemists, Hairdressers, etc., wanted to handle very high-class Creams of strikingly attractive appearance, well advertised, on good commission. Smith & Smith, 24 Jessel House, Judd Street, London. (Museum 5295.)

**SITUATION** vacant for Representative in Birmingham district; connection essential. Apply, by letter, to 88/8, Office of this Paper.

**THE OATINE CO.** have vacancies in the following districts:—(1) North of England, (2) Midlands, (3) Eastern and Home Counties, (4) West of England and Wales. Applications are invited from men with good connections who are open to represent an additional firm. Full particulars of experience, firms at present represented and territory to Manager, 4 Mermaid Court, London, S.E.

**WANTED**, Salesman, already calling on Chemists, to carry Surgical Rubber Goods; advertised brand; has been on the market for over 25 years; good commission; various districts open; state which required; give references. 71/38, Office of this Paper.

### [COLONIAL, INDIAN AND FOREIGN]

**INDIA, BURMA AND CEYLON**.—Travelling Representative required by Export Druggists well known in these markets; previous similar experience essential; travelling expenses and commission. Apply, with full particulars, to 72/376, Office of this Paper.

**FRANCE**.—Wanted for Paris, man with experience of Factory Organisation; knowledge of French essential. Write, stating age and experience, to Box 322, c/o Mitchell's Advertising Agency, 1 Snow Hill, E.C.1.

**FRENCH RIVIERA**.—Competent Dispenser, under 35, of good address, required for season from November 15; knowledge of French not essential; salary 1,000 francs; fare paid. Apply 83/27, Office of this Paper.

**MONTE-CARLO AND MENTONE**.—Assistants wanted; if with diploma 1,000 francs per month, if without 750; 5% commission on sundries and house specialities; one day free weekly; hours 8 to 8, 1½ hours lunch; 350 francs travelling expenses allowed; season, November to April. Write J. V. Curtil, Pharmacien, Monte-Carlo.

### SITUATIONS WANTED.

#### RETAIL.

#### [HOME.]

2s. for 18 words or less; 6d. for every additional 10 words or less, prepaid.

The ADVERTISER may if preferred have replies addressed to this Office, and forwarded on payment of an additional charge of 1/-.

**A CAPABLE**, qualified man (36) of all-round experience desires situation single; abstainer; reasonable; outdoors. 85/27, Office of this Paper.

**A COMPETENT** Assistant, unqualified, 42, tall, wide experience, Counter, Dispensing, Prescribing, Display, Photography (Sales and Practical), desires position, Manager or Senior; disengaged. Offers to Richardson, Riverside, Framlingham, Suffolk.

**A COMPETENT**, thoroughly experienced qualified Chemist, Scotchman, desires management of good-class business in London area; disengaged October 12. 72/372, Office of this Paper.

**A THOROUGHLY** capable Dispenser and Counterman, with excellent references, is open for immediate locum or permanent engagement; distance immaterial; unqualified. O'Donoghue, 131 Mount View Road, N.4.

**ADVERTISER**, 25, qualified, 10 years' all-round experience, Window-dressing, Photographic, Dispensing, desires permanency. "Locum," c/o Hall, Chemist, Skegness.

**A N** experienced Manager; Dispensing, Photography, Optics, Window-dressing, etc.; unqualified; terms moderate; disengaged. "Southern," 10 Trinity Street, Hastings.

**A S** Manager; qualified; 35; shortly disengaged; married; all-round experience; excellent references. "B.," 24 Mead Plat, Willesden, N.W.

**A SSISTANT** (21); five years' good experience Dispensing, Counter, Window-dressing; London preferred; disengaged. Parris, 5, Quex Road, Westgate-on-Sea.

**A SSISTANT** or Locum; at once; disengaged September 26. "Aspirin," 5 Romney Place, Maidstone, Kent.

**A SSISTANT** or Manager; 20 years' first-class experience; tall; abstainer; 7 years Regent Street; unqualified. "Chemist," 4 Arundel Gardens, W.11.

**A SSISTANT**; capable; energetic; thoroughly experienced, Dispensing, Counter, Photography. "Bromide" (P.C.B. 18/34), Office of this Paper.

**A SSISTANT** (23); all-round and Photography; referred Pharmacy only; moderate salary. "M.," 5 Brixton Hill, S.W.2.

**A SSISTANT**; qualified; 6 years' Harrogate experience; used to quick, good-class trade. Abbott, 1 Hambleton Terrace, Knaresborough.

**ASSISTANT** (unqualified); 10 years' high- and middle-class experience; Dispensing, Counter, Stock, Photography; steady; reliable; disengaged October 24; good references. "J., 76 Carlton Road, Torquay.

**ASSISTANT**, 23, unqualified, experienced, capable, desires full or part-time situation in London or provinces; disengaged September 30. 88/4, Office of this Paper.

**BRANCH Manager**; qualified; 16 years' good middle-class experience; successful record; sound references; Photography; well worthy attention and investigation; disengaged. "A. E. J., 65 Chamberlain Road, London, N.9.

**DERBY**, Burton or District.—Permanency desired by Assistant; referred subject; married; 30 years of age; experienced all branches of the trade; excellent references and character. Full particulars, 88/7, Office of this Paper.

**DISENGAGED** November 2.—Energetic, unqualified Assistant; age 32; experienced Counter-hand, Window-dressing, etc.; West Riding preferred. G. Burley, 162 Bolton Road, Pendleton, Manchester.

**DISENGAGED**.—Minor qualification; experienced male; Locum or permanency. "Pharmacist," "The Limes," 69 Elthorne Park Road, Hanwell, W.7.

**DISENGAGED**; can give immediate interview; qualified man; 35; married; experienced manager; good all-round knowledge of the business; good references. Halkes, 55 Pennell Street, Lincoln.

**DISENGAGED**; qualified; Optics, Photographics; 37; any capacity. 79 Commercial Road, Abercarn, Mon.

**DRUG Store Manager, Assistant or Locum**; anywhere; just out of own business; thoroughly experienced; middle age; abstainer; married; excellent references; moderate salary. "Statim," The Pharmacy, Rodley, Leeds.

**EXPERIENCED**—Assistant requires part-time employment, within reach of colleges; free October 5; evenings, Fridays and Saturdays; Window-dressing, Photography and Wireless. 88/11, Office of this Paper.

**GRIMSBY**.—Assistant, 25, unqualified requires situation locally to attend technical classes; excellent references. H. W. Hockney, 24 Dorrington Street.

**LADY**, 25, seeks afternoon engagement with Doctor; qualified Dispenser (Hall and slight experience), trained Secretary, Shorthand, Typing, Languages; experienced; highly recommended; free now. Hunt, 76 Ebury Street, S.W.1.

**LADY** desires responsible position in Drugs, Perfumery, Toilet, etc.; used to buying and supervising; 13 years' thorough experience (10 years West-End); highly recommended. 82/37, Office of this Paper.

**LADY Assistant**, unqualified, thoroughly competent, reliable, London and country experience in Dispensing, Counter, Photography, and Window-dressing, desires engagement; splendid references; now at liberty. "Rbei," 16 Willow Street, London, E.1.

**LADY**, 22, unqualified, requires part-time situation; 7 years' experience (2 years London), Dispensing, Counter, D. and P.; well recommended. P.C.B. 19/5, Office of this Paper.

**LADY Assistant**, 7 years' experience, Counter, Dispensing and Window-dressing, requires post near Sheffield. English, c/o Mrs. Corner, 3 Melbourne Road, Stamford, Lincs.

**LADY Dispenser**, experienced (Hall), desires post with Doctor or Chemist; Book-keeping, Typing, etc.; permanent or Locum. 1 Tivoli Road, South Margate, Kent.

**LADY Dispenser (Hall)** requires post anywhere; excellent Hospital and Doctor's experience; Book-keeping; moderate salary. 65 Mayfair Avenue, Ilford, Essex.

**LADY Assistant**, unqualified, desires post in London; Counter, Photographic and Window-dressing; 8 years' experience. 87/4, Office of this Paper.

**LOCUM**, Ph.C.; tall; good appearance; thoroughly experienced; able to manage; undeniable references; free October 3; London or Home Counties preferred. Ellison, c/o 92 Mortimer Street, Heme Bay.

**LOCUM**, 45; disengaged; thoroughly experienced and reliable; Hall Certificate; terms moderate. "Scotia," 172 St. James Road, Croydon.

**LOCUM** or part-time engagement; disengaged; thoroughly experienced and reliable; good references. Taylor, 2 Sulina Road, Brixton Hill, S.W.2.

**LOCUM**; disengaged; accept reasonable terms; take entire charge; knowledge Photography; abstainer; reliable. "Chemicus," Evans Lescher Webb, Chemists, Liverpool.

## NAMES AND ADDRESSES.

When sending advertisements for any of the sections in this Supplement, advertisers—as a guarantee of good faith and not necessarily for publication—should always give their names and addresses. It sometimes occurs that this rule is not followed and delay and disappointment ensues. Strict attention to this detail will be appreciated.

**LOCUM**; experienced; take entire charge; disengaged; accept low terms; abstainer; offers invited. "Pharmacist," c/o Edmunds, Chemist, Barry, Glam.

**LIVE** Business Pharmacist, qualified, experience in all branches connected with Retail trade, also knowledge of Wholesale work, seeking change shortly. Write "G. W. T.," 85/26, Office of this Paper.

**LIVERPOOL OR NEAR**.—M.P.S. (lady) desires post; trained in Liverpool; free middle of October. 80/31, Office of this Paper.

**M.P.S.**, good all-round experience, desires position, with view to succession; Scotland preferred. 86/6, Office of this Paper.

**M.P.S.** desires position as Manager in Wholesale or Retail; West-End and City experience; excellent references; at present engaged, but desirous of improving position. P.C.B. 18/35, Office of this Paper.

**MAJOR** Student, 29, requires part-time berth, London district; 5 years' managing experience. 77/32, Office of this Paper.

**MANAGER** or Locum; Qualified; age 30; efficient, good address; A1 references; interview; replies state terms and hours; disengaged October 12. 85/31, Office of this Paper.

**MANAGER**, or with view to succession; London and seaside managerships; Photography, Window-dressing and Counter; free now. "Statim," 33 Eardley Crescent, Earl's Court.

**MANAGER (31)**, Qualified, Window-dresser, Photo work and Prescribing, keen buyer, used to quick Cash trade, desires Management on salary and commission basis; free one week. "Chemist," 19 Redcliffe Road, S.W.10.

**PART-TIME**.—Unqualified, age 24 (shortly residing Stockwell), requires evenings and Saturday engagement whilst attending college; experienced all branches; interview. Rutherford, 32 Cleveland Road, Ilford.

**PART-TIME Dispensing**.—Refined, well-educated young lady, with slight Dispensing and Counter experience, would like part-time work in London; small remuneration accepted in exchange for experience until proficient. 86/36, Office of this Paper.

**PERMANENCY** or temporary; competent; reliable; good varied experience, all class; well recommended. "Chemicus," 79 Cecil Street, Manchester, S.

**QUALIFIED**; thoroughly reliable and experienced; age 45; height 5 ft. 9½ in.; 25 years' excellent references; last position 6 years; permanency desired. "Spes," 57 Vivian Road, Firth Park, Sheffield.

**QUALIFIED**; 7 years' experience, Dispensing, Counter, Photography; temporary or permanent; Liverpool preferred. 333 Thingwall Road, Wavertree, Liverpool.

**QUALIFIED**, tall, energetic, abstainer, 15 years' first-class experience as Assistant and Manager, thorough knowledge Photography, desires position in or close to London, preferably with firm doing Optics; at present relieving; disengaged early October; interview by arrangement. "Chemist," c/o The Regent, High Street, Broadstairs, Kent.

**QUALIFIED** Manager or Senior; age 26; tall; abstainer; energetic; undeniable references; London or country; disengaged. 86/34, Office of this Paper.

**QUALIFIED**; elderly; Cover, Manager, etc.; disengaged; any district; active. State terms to 87/5, Office of this Paper.

**QUALIFIED**; single; 43; good all-round experience (West-End and Store); capable of taking charge; excellent references. 87/29, Office of this Paper.

**QUALIFIED**, 27, seeks position as Manager in good-class Pharmacy, with house attached; tall; gentlemanly appearance and address; excellent references; £5 weekly; free one month. 88/5, Office of this Paper.

**SMART** Dispenser, N.H.I., Counterman, Window-dresser, unqualified, desires part-time, occasional or otherwise. 238 High Street, Barnet.

**UNQUALIFIED** Assistant, 37 years' experience Wholesale and Retail, desires position; good references; disengaged; city or suburbs. Gells, 12 Vivian Avenue East, Wembley Hill.

**UNQUALIFIED** lady; experienced Retail, Dispensing, etc. "Miss F.," 59 Waveley Road, Coventry.

**UNQUALIFIED** (38), married, disengaged; all-round and West-End experience; country or town. F. W. Field, 27 Tressillian Road, St. John's, Brockley, London, S.E.

**YOUNG** lady, M.P.S.; recently qualified; requires position in London; whole or part time. P.C.B. 19/3, Office of this Paper.

### WHOLESALE.

**CAN** anyone offer advertiser position as Checker or Stock-keeper or any similar position in Wholesale Warehouse? With 9 years' experience, thoroughly reliable, good worker; excellent references; disengaged. 85/5, Office of this Paper.

**EXPERIENCED** Wet Counterman, thorough knowledge of Chemicals and Drys, also Dispensing, seeks situation in Leeds; at present Wet Counterman in London. P.C.B. 18/14, Office of this Paper.

**EXPERIENCED** Representative, with connection over extensive area, including Ireland, is open for first-class representation; many years working same ground; energetic. Address, with particulars, "Tragacanth," 86/1, Office of this Paper.

**LONDON**, West-end, Stores, Shippers; long experience and thorough training; highest real recommendations as Representative and Sales Manager. "Chemist," 85/28, Office of this Paper.

**MAN** requires situation in Wholesale House; good all-round knowledge; excellent reference as to ability. P.C.B. 18/36, Office of this Paper.

**PERFUMERY**.—Practical man, with long experience in manufacturing first-class Vanishing Creams, Face Powders, Toilet Scaps, Perfumes, etc., seeks berth; excellent references. "Ionone" (P.C.B. 18/15), Office of this Paper.

**REPRESENTATIVE** open re-engagement; wide experience, R Drugs, Foods, Organo-Therapy; excellent references; guarantee policy. P.C.B. 18/39, Office of this Paper.

**SUCCESSFUL** Traveller, with tact, energy and push, used to propaganda work with Doctors and Dentists, is open to represent good house wanting Specialities introduced to profession, or as Salesman; extensive connection amongst Chemists. "Medical," 76/36, Office of this Paper.

**TOILET** Preparations.—Practical man, seeking scope, desires change; thorough knowledge of Manufacture, Face Creams, Powders, Shampoos, Hair Washes, Bath Crystals, etc.; improved formulas; good organiser; conscientious. 87/15, Office of this Paper.

**TOILET** and Perfumery.—Practical man as Assistant or Sole Charge; experienced in Perfumes, Vanishing and Face Creams, Toilet Powders and Washes, Brills, Shampoos, etc.; excellent references; salary moderate. 86/20, Office of this Paper.

**TRAVELLER**, excellent connection Midlands and West of England, wishes represent first-class House, either or both grounds, Drug or allied trades; experienced Salesman; earnest worker; expenses and commission; qualified. 87/38, Office of this Paper.

**UNUSUAL** opportunity for high-class Proprietary, Toilet, Drug or Sundry House to acquire Depot and Representation in North Midlands; advertiser, experienced and well known, has excellent show rooms, main thoroughfare most important town; large storage room same block; own car. 72/370, Office of this Paper.

### MISCELLANEOUS.

10s. for 60 words; 1s. for every additional 10 words or less.

**McADAM & TUCKNISS**, Stock and Share Brokers, Westminster Bank Chambers, Blackheath, S.E.3. Established 1898. Telephone: 81 Lee Green. Shares for Sale, free of commission (subject) :—435 Allen & Hanbury £1 "A", 6%; Preference, 20s. 10d. with dividend due October 1; 200 "B" Preference, 20s. 7½d. with dividend; 225 "C" Preference, 20s. 6d. with dividend; 600 Amalgamated Dental £1 8% Preferred, 20s. 6d.; 100 Anglo Java Rubber, 7s. 10d.; 22 Camwal Preference, 5s. 6d.; 900 Dental Manufacturing £1 fully pd., 5s.; 50 G. B. Kent 5½% Prefs., 14s. 6d.; 35 Lewis & Burrows £1 6% Prefs., 18s. 3d.; 50 Idris "A" Prefs., 15s. 9d. Rubber shares dealt in at close prices. Wanted (subject) :—£2,000 Idris Debenture 6½%; Wright Layman Prefs., 19s.; Lever 7% and 8% Prefs.

### ALL PUBLIC PHARMACISTS

should join at once

**The NATIONAL DRUG & CHEMICAL UNION**  
(incorporating the National Association of Chemists' Assistants)

**BENEFITS:** Trade Protection—Legal Aid—Unemployment Benefit—Free Use of Employment Bureau.

Write for particulars:—ARTHUR J. GILLIAN, Gen. Sec.  
149 Newington Causeway, LONDON, S.E.1

**CHEMIST'S** Fittings (second-hand), also new.—Ranges of Drug Drawers, Dispensing Screens, Glass-fronted Counters, Wallcases, Centre Cases, and All Glass Counters; Counter Cash Tills from 25s. The "Kwik-Sale" Case, made specially for Chemists' Counters, with slope front and mirror sliding doors at back, 3 ft. long, price £5 10s. D. MATTHEWS & SON, Chemist Fitters, 14 and 16 Manchester Street, Liverpool.

**MAHOGANY** Fittings; best quality and finish; carving, plate-glass mirroring, sufficient to fit moderate-sized shop; available in few weeks; may be viewed by appointment in Central West-End position; business still going concern. Apply 72/379, Office of this Paper.

**SECOND-HAND CHEMISTS' FITTINGS**.—We have an exceptionally fine selection of these in all sizes; prices are right, and goods are in first-class condition; we shall be pleased to supply particulars and prices. Call or write, RUDDUCK & CO., 262 Old Street, London, E.C.2.

**SHOP-FITTINGS**.—12 ft. Drug Fitting with drug drawers, etc.; 10 ft. glass front Counter; 6 ft. handsome Dispensing Screen; bent plate-glass Counter Case; Perfume Desk and Case; 6 ft. Wall Case; two nests of Counter Drawers; £140; suit beginner or branch. PHILIP JOSEPHS & SONS, LTD., 93 Old Street, London, E.C.1.

### INCOME TAX ASSESSMENT.

**IS** your Income-Tax Assessment too high? If so, is it because your accounts are not kept efficiently? We are experts for Pharmacists' Book-keeping. Moderate charges.

Write for full particulars to

**PERIODIC ACCOUNTANCY SERVICE**,  
11 Woodgrange Gardens, North Finchley, N.12.

**ANTS EGGS**.—3 cwt. for prompt delivery ex-warehouse, London. Offers to Gooding & Permain, Alhion House, 59 New Oxford Street, W.C.1.

**BARREL MIXER**, fast and loose pulley, £4; enamelled-lined steam jacket pan, 42 in. by 12 in., as new, £25; about 150 lb. of various medicated tablet and a quantity of pills, lot £6; about 40 gross various tablet bottles, £6; 20 gross 4-oz. glass cream jars, £8; cask lamp black, 3 cwt., 30s. L. BATLEY, Gorsey Works, Stockport.

### LIMITED COMPANIES REGISTERED.

—I have now been engaged in this work over 20 years, so you may rely that my experience in Chemist and other Companies (I take all trades) is hard to beat. Most reasonable and inclusive fee. Advice free.—A. B. SLACK, 15 Christ Church Avenue, West Didsbury, Manchester.

### EXCHANGE COLUMN.

2d. per word: Minimum 2s.

The ADVERTISER may if preferred have replies addressed to this Office, and forwarded on payment of an additional charge of 1/-.

### WANTED.

**MIXER** or Mixer and Sifter; capacity 14-28 lbs. Vince & Co., Cheapside, Lancaster.

**GARDNER MIXER**, 250 to 500 lbs. capacity. Particulars and lowest price to 71/365, Office of this Paper.

**SMALL** Second-hand Filling Machine for collapsible tubes, with fittings. Lewis, 2 Pe in Street, Islington, N.1.

**GOWER**, Chemists' Bookseller, 41 Voltaire Road, Clapham, wants Pharmaceutical Books and Students' Requisites.

**CORKING MACHINE**, suitable for taper corks; to be used for the packed goods trade. 71/369, Office of this Paper.

**CHEMIST** requires Shop Fittings, Counter, Cases, Shop Rounds, Carboys, etc. Levy, 72 Tredegar Road, Bow, E.3. Telephone East 1326.

# Wright's Coal Tar Soap

SPECIAL OFFER FOR  
**WINDOW DISPLAYS**  
ON APPLICATION

WRIGHT'S EFFERVESCENT FRUIT SALINE  
and WRIGHT'S LIVER GRANULES

are very satisfactory preparations

Particularly palatable,  
in fine pourable granules,  
effervescence brisk and sustained.  
The packages are designed with good taste,  
and the profit is guaranteed.

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*Our effervescent salines and granules cover a wide range of styles  
and medicaments. A postal request for particulars will receive  
appreciative attention.*

**WRIGHT, LAYMAN & UMNEY, LTD.,**  
SOUTHWARK LONDON, S.E.1



# XMAS REQUIREMENTS

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OUR representatives are now booking Autumn and Xmas requirements, and we strongly recommend that orders be placed without delay.

Delivery of Xmas goods ordered within the next few weeks can be delayed until later in the year.

It is only when orders are placed at an early date that delivery of Xmas stock in good time can be assured, and our customers' co-operation in this respect will enable prompt attention to be given to their subsequent requirements as Xmas draws near, at which period we are inundated with orders.



LUBARRY

81

BROMPTON

ROAD

LONDON

S.W.

